

CREATIVE WIZARD ON WEB

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ABSTRACT

Creative Wizard On Web is a Web site that offer printable and also send via e-mail birthday card. The main idea of this project is to let user make the card themselves, which user is given a blank worksheet and it's up their creative and imaginative mind to create a birthday card using any images and sentiments provided. The options, either they can start creating the card from scratch or they can just select any template they desired.

There are a few advantages that are crucial to ensure the success of this kind of Web site. Most importantly, user can reduce the cost to buy ready-made card in store. The cost to buy a ready-made card is much more expensive than buying a piece of plain paper and use it to make a card themselves. Besides, by making the card themselves, the recipient will not only be surprised but it will give them a priceless sentimental value.

This report introduces the project and provides a description on the topics studied and researched during the literature survey. The methodology for the system development is also discussed, which is the Waterfall Model . And finally, this report also included the system development tools chosen plus, the details of system design of Creative Wizard On Web.

WAHIZA

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CHAPTER

INTRODUCTION

University of Malaya

CHAPTER 1

INTRODUCTION

CHAPTER 1 INTRODUCTION

This chapter features a full description including the definition, the goal, the objectives and the scope of the project. It also features the outline of the project's implementation chart with all diagrams and timetables necessary.

1.1 PROJECT OVERVIEW

Creative Wizard On Web is a multimedia package created for unlimited, all range of user who always finds trouble finding Web site that offers a printable greeting cards. This wizard features unparalleled creative tools and an easy-to-use interface that anyone can easily produce 'cute and attractive' looking greeting cards on their own. This 'do-it-yourself' based Web site lets user create a variety of greeting cards easily, quickly and directly without having to link to another site, and without having to watch any advertisement.

With Creative Wizard On Web, card can be created by using professionally designed templates that has so many to choose from plus a lot of high-quality images and sentiments in different style of fonts and colors. It also offer an option for user to create the card by combining their own image, sentiment, text message, or in simpler word - from scratch which means the user is given a blank worksheet and it's up to them to use whatever image they want to use depending on their imaginative abilities to create a card.

This Creative Wizard On Web helps by letting the user to select from several project categories and refine the selection to include specific size and layout information.

And after the user has satisfied with their creative work, they can print the card and send it away by hand or they can just send the card via e-mail..

1.2 PROJECT OBJECTIVES

This report identifies 5 objectives, which I personally believe are vital for the success of the final product. With these objectives in mind, a careful research and development work can be fulfilled and aligned towards the aim of achieving these objectives. Hence the ultimate end product will not only reflect its usefulness but the quality, which is aimed to satisfy many users.

The objectives are as follows:

- ❖ To produce a package which is fun to use
- ❖ To develop a quality greeting card package that will give user more choice and chance to make a card that is really will satisfy their need.
- ❖ To offer a printable greeting card Web site that not only the cards are printable but the user also can make them themselves. Plus user is given other option, which is send via e-mail.
- ❖ To reduce the cost of buying ready-made cards in store by user. The cost to buy a ready-made card is much more expensive than buying a piece of plain paper and use it to make a card yourself.

1.3 PROJECT SCOPE

The scope of this project covers identifiable areas of report writing, system analysis, system design, system development and testing and the final product. The final product caters the need of printable greeting cards. My project particularly concentrates on birthday card.

Most of the greeting card Web site today offers all types of greeting card for all occasion. None of them specifically do one type of card. For user who wish to save some time looking for the right printable card, especially birthday card they sure would like to come across directly to the site that offer printable birthday card. With Creative Wizard On Web, they will get what they want. Forget going card shopping; the picked over selections, not finding the right expression on the card you really like and of course, the cost of buying cards, with this Web site all of the problems will be solved. In fact, there are the reason that Creative Wizard On Web is developed plus my intention to add one more Web site in the list of Web sites that offer printable birthday cards.

The scope of the project include:

- ❖ Start from scratch option
- ❖ Use ready-made template
- ❖ Image database to store images and variety of fonts and sentiments

The target user for Creative Wizard On Web includes **the entire Internet user** that would like to:

- ❖ get a printable version of birthday card
- ❖ create their own personalized birthday card
- ❖ reduce cost of buying ready-made card in store
- ❖ don't have time to shop for card

1.4 INFORMATION SEARCHING METHOD

Information searching refers to the method of collecting as many information as possible about the system. It is one of the techniques required to improve one's understanding about the system and to satisfy the need of future researched system. It also required to accommodate the work base for the system design. Information searching method include:

❖ *Books and references*

Books and references are used to collect the information needed about developing a system. The information are collected from sources like information system, development tools, programming and database references, which can be found in Main Library University of Malaya and also National Library. Some of them are from my own collections.

❖ *Internet surfing*

Internet is like a largest warehouse of information in the world. I use the Internet to search information about other Web site that serve the same functions, the tools that I want to use, database, project methodology and other related information.

❖ *Document's room*

The document's room, which is situated in the old building of FSKTM, is a room that placed thesis reports of senior students. I used the senior's report as a reference to do my final project. There's lot of useful information that I've got from the reference such as project plan and main topics.

1.5 PROJECT SCHEDULE

ACTIVITY / MONTH	JUNE				JULY				AUG				SEPT				OCT				NOV				DEC				JAN				FEB			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
MODEL 1: Information Gathering																																				
1.1 Observation																																				
1.2 Identify objective, problem and scope																																				
1.3 Internet research																																				
MODEL 2: Literature Review																																				
2.1 Current system analysis																																				
2.2 Tools research																																				
2.3 Database research																																				
MODEL 3: System Analysis																																				
3.1 System methodology																																				
3.2 Function & nonfunction requirements																																				
3.3 Software and hardware requirement																																				
MODEL 4: System Design																																				
4.1 System architecture																																				
4.2 System structure chart																																				
4.4 Data flow diagram																																				
MODEL 5: System Development																																				
5.1 System coding																																				
5.2 Development tools																																				
5.3 Program documentation																																				
5.4 User manual																																				
MODEL 6: System Testing																																				
6.1 System testing strategy																																				
6.2 Unit testing																																				
6.3 Module testing																																				
6.4 System testing																																				
MODEL 7: System Evaluation																																				
7.1 Problems occurred and solutions																																				
7.2 System evaluation by user																																				
7.3 System advantages																																				
7.4 Experience gain																																				
MODEL 8: Implementation																																				

1.6 CHAPTER SUMMARY

This section will explain briefly the conclusion of every chapter contained in this report. Project proposal report consists of 5 chapters and the rest are for system development.

❖ *Chapter 1: Introduction*

This chapter introduces and fully describes the Creative Wizard On Web including the objective, scope and also the entire system development schedule.

❖ *Chapter 2: Literature Review*

Chapter 2 explains the literature review that has been done to get the information required by system, how the data gained and collected and also the comparison between the current available systems with the developing system.

❖ *Chapter 3: Methodology*

This chapter explains the methodology and approaches that have been chosen to develop system.

❖ *Chapter 4: System Analysis*

System analysis analyzes the system requirements including function and non-function requirements, and software and hardware requirements. This chapter also explains about why those requirements are needed and what are the reasons of using the tools chosen to develop the system.

❖ *Chapter 5: System Design*

This chapter explains the concept and design techniques of the system. It includes structure chart, data flow diagram, process flow chart, user interface and database design.

❖ *Chapter 6: System Implementation*

In this chapter, all of the system development steps will be utterly explained with details starting from the modules development that will be used with each of their functions.

❖ *Chapter 7: System Testing*

Chapter 7 will discuss all the testing steps that are going to be used for the system. This phase is very important because through this phase, all the error and mistake in coding and interface can be identified.

❖ *Chapter 8: System Evaluation*

This chapter will see the system evaluation. System evaluation will deal with lots of subject for example the problem occurred while developing the system, the security and restrain of the system.

1.7 SUMMARY

From this first chapter, the objective, scope, purpose and full description of the project have been explained. The system development project schedule is also included.

CHAPTER 2

LITERATURE REVIEW

CHAPTER 2 LITERATURE REVIEW

2.1 INTRODUCTION

This chapter will describe in detail the various studies and research done on the topics of existing greeting card Web sites, the Internet, software and technologies. It is the objective of this chapter to outline systematically all these studies so that it will assist in the proper selection tools and development methods plus to understand the strength, weakness, opportunities, potential and current issues about Creative Wizard On Web.

2.2 GRAPHIC FILE FORMAT

Part of my project involves developing a Web-based application that can access and display the images on the client browser from image database prior to user request. I have done research on graphics file format to find out the type of images that is suitable to be displayed on any browser.

• 2.2.1 The Bitmap Format

Bitmaps are the simplest form of raster images available. It typically consists of a header specifying height and width for the image followed by a long string of binary encoded numbers, each of which represents a color for an individual pixel. Small bitmaps are used for icons and images that need to be loaded quickly. Bitmaps are loaded quickly into video memory and displayed quickly because there is no decoding involved in the display of these files. Information exists for every pixel.

Bitmaps are relatively ungainly and resize fairly poorly. They do not adjust easily to

resizing and editing because of their strict pixel by pixel nature. Besides that, large bitmaps will take a large amount of memory. Bitmaps can easily be converted to every other significant format because bitmaps are a simple format with compression.

• 2.2.2 The GIF Format

The GIF (*Graphical Interchange Format*) was designed to deliver high-resolution images over Internet. The GIF uses a proprietary encoding/decoding scheme called LZW that is a non-lossy compression. A GIF file consists of a header and the encoded data. When you view the image, the software uses the LZW scheme to decode the file into a bitmap for display. Similarly, when you save a bitmap as a GIF, the bitmap is encoded and compressed. This compression works well and led to the popularity of the GIF image.

GIFs are very Internet compatible because of their small size and special features. They are the most common format for buttons, icons, and horizontal rules in HTML documents. Additionally, the interlacing features allow a document to be downloaded and have the image displayed progressively. Lately, the animation capabilities of GIFs are used for spicing up web pages in all kinds of interesting ways.

When the GIF format was first invented, 256 colors was a lot. Nowadays, 256 colors is a limitation. Thus, GIF file format is not suitable for photographs and high-resolution images. Additionally, the nature of GIFs is such that simultaneous display of more than a couple of images can eat up all colors on the screen and result in poorly colored images.

• 2.2.3 The JPEG Format

JPEG (*Joint Photographic Experts Group*) is a standardized graphics format. The standard was developed for compressing raw digital photographic information depicting real world or realistic “photographic” scenes. JPEG handle only still image. This includes painting, photographic, texture etc. JPEG allows levels of compression and decompression to be manipulated by adjusting quality settings. JPEG allow the storage of pictures at a much higher color resolution. This allows for greater accuracy and better-looking images.

One problem with JPEG is that it is a “lossy” compression format. If you begin with a raw image such as TIFF or BMP, all of the information exists. However, when you compress the information using JPEG, some of the information is lost.

• 2.2.4 The PNG Format

The PNG (*Portable Network Graphics*) file format was introduced to replace the GIF file format. The main reason for the implementation of PNG was the age of the GIF format and the controversy over the LZW compression algorithm that GIF uses. In order to get around these two obstacles, PNG was born.

PNG was built for the Web. It was written with all the Web oriented features of GIF and more. Below are some of the features of PNG as taken from the PNG specification:

- ❖ Indexed-color images of up to 256 colors
- ❖ Progressive display: a suitably prepared image file can be displayed as it is received over a communication link, yielding a low-resolution image very quickly followed by gradual improvement of detail.

- ❖ Transparency: portions of the image can be marked as transparent, creating the effect of a nonrectangular image.
- ❖ Ancillary information: textual comment and other data can be stored within the image file.
- ❖ Effective, 100% lossless compression

Important new features of PNG, not available in GIF, include:

- ❖ True color images of up to 48 bits per pixel
- ❖ Grayscale images of up to 16 bits per pixel
- ❖ Full alpha channel (general transparency masks)
- ❖ Image gamma information, which support automatic display of images with correct brightness/ contrast regardless of the machines used to originate and display the image
- ❖ Reliable, straightforward detection of file corruption.
- ❖ Faster initial presentation in progressive display mode

PNG is a continuation of the GIF tradition, but is unencumbered by copyrights and limited color display. Currently, there are no browsers that support PNG, but there are plug-ins that allow browsers to display PNG files. PNG does not support animation.

2.3 IMAGE STORAGE AND COMPRESSION

One of the fundamental problems that need to be addressed in image databases is the physical storage structure of images. A number of standard image compression and storage techniques are emerging. Most important among these is JPEG. Image should be stored in translatable formats.

The early work on using database management technology to support multimedia information system has concentrated on the storage of meta information in the database while the actual multimedia objects are stored in ordinary files. Images can also be stored in binary format. Nowadays, some database system (such as Microsoft SQL Server) has a datatype called IMAGE, which can store image datatype in image value. The image value must proceed by Ox (for example, Oxaabbcc).

2.4 QUERY AND INDEXING OF IMAGE DATABASES

There seem to be at least 3 possible methods by which images might be indexed; by words, by using a visual thesaurus, and by picture content. So far, only the “words” method is in use in real world situation.

• 2.4.1 Indexing and Retrieval by Words

Explanation of this method is provided by given an example, Iconclass.

Iconclass – A thesaurus consisting of 17 volume of hierarchically arranged codes associated with a textual description in English, designed for classifying the content and subject matter of fine art material.

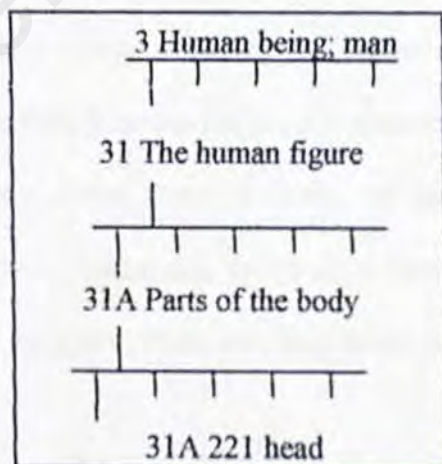


Figure 2.1: Iconclass Thesaurus

The first 2 characters of the code are digits and third is always a capital letter permitting 25 subdivisions (J is excluded) at the third level. When a new word or phase is added to the thesaurus in its correct alphabetical position, its notation is composed as a primary symbol and a successive level of sub-divisions of the primary code. The arrangement of part the thesaurus itself, showing the heading and sub-heading of the major division from which the indexing term “head” was derived (31A221, as shown in the figure).

- **2.4.2 Indexing and Retrieval Using A Visual Thesaurus**

Visual thesaurus is a thesaurus in which a range of images are linked to thesaurus terms in such a way that the terms retrieve not only broader, narrower, and related terms, but also the images associated with them.

A range of “popular image” is linked to the thesaurus terms and selection of a descriptive term from the thesaurus retrieves its associated image, as well as broader, narrower and related terms along with their associated images.

- **2.4.3 Indexing and Retrieval by Query Pictures**

A query containing picture content information such as a sketch, and/or color and texture, to be matched against database picture. For example, in the edge-sketch query method, the user draws a shape, however crude, on the screen, and the machine obliges by presenting those thumbnails, which most nearly resemble the sketch, as hits. The system is used for approximate matching between an input query-picture and a database picture.

2.5 CLIENT/SERVER ARCHITECTURE

There are 2 types of client/server architecture:

- **2.5.1 Two-tier Client/Server**

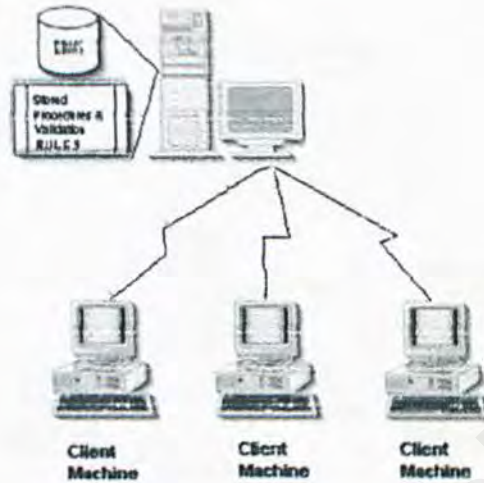


Figure 2.2 : A typical two-tier client/server application.

In the traditional two-tier client/server environment, much of the processing is performed on the client workstation, using the memory space and processing power of the client to provide much of the functionality of the system fields edit, local lookups, and access to peripheral devices (scanners, printer and so on) are provided and managed by the client system.

In this two-tier architecture, the client has to be aware of where the data resides and what the physical data looks like. The data may reside on one or more database servers, on a mid-range machine, or on a mainframe. The formatting and displaying of the information is provided by the client application as well. The server(s) would routinely only provide access to the data. These ease the flexibility of these two-tier

products to create new applications. This technique continues to be driving many smaller scale business applications.

- **2.5.2 Three-tier (Multi-tier) Client/Server**

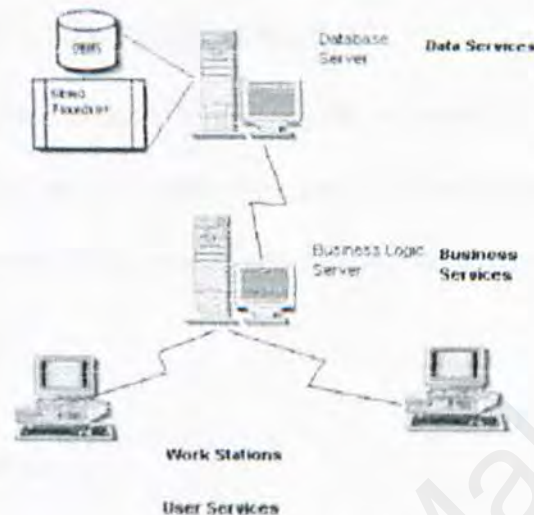


Figure 2.3 : A very simplistic n-tier layout.

The three-tier, later to be called multi-tier architecture grew out of this early experience with “distributed” applications. As the two-tier applications percolated from individual and departmental units to the enterprise, it was found that they do not scale very-easily. And in our ever-changing business environment, scalability and maintainability of a system are primary concerns. Another factor that contributes to the move from two-tier to three-tier systems is the wide variety of clients within a larger organization.

In multi-tier architecture, each of the major pieces of functionality is isolated. The presentation layer is independent of the business logic, which in turn, is separated from the data access layer. This model requires much more analysis and design on the front-end, but the dividends reduced maintenance and greater flexibility pay off time

and again. Refer to the multi-tier (n-tier) client/server diagram above to get a clear picture about the architecture. In the diagram, the network server is not shown. It's assumed that it is already in place.

2.6 SOFTWARE AND TECHNOLOGY

This section will attempt to describe in detail the software and various technologies taken into consideration when building the system. The main areas of research are the platforms, web languages, technologies and database management system. These are duly discussed below.

• 2.6.1 Platform

With reference to computers, a platform is an underlying computer system on which application programs can run. On personal computers, Windows 95 and the Macintosh are examples of two different platforms. On enterprise servers or mainframes, IBM's System/390 is an example of a platform.

A platform consists of an operating system, which is the computer system's coordinating program, and a microprocessor, which is the microchip in the computer that performs logic operations and manages data movement in the computer. The operating system must be designed to work with the particular microprocessor's set of instructions.

Historically, most applications programs have had to be written to run on a particular platform. Each platform provided a different application program interface for different system services. In addition, a platform is any base of technologies on which other technologies or processes are built.

2.6.1.1 Windows 95/98/Me

One of the most popular operating system is the Microsoft's family of Windows operating systems. The Windows family of operating system is basically divided into two categories. The Windows 95, 98 and Millennium Edition (Me) are mostly used by home users while the more stable category of operating systems, consisting the Windows NT and Windows 2000, are mostly used by corporations.

Windows 95/98/Me are widely installed products in the market place and remain the dominant operating system for personal computer. The relatively easy process of installation, ease of use and the user friendly Graphics User Interface (GUI) improved the penetration and usage of the personal computer since its first product, Windows 95 was launched in 1995.

Starting with Windows 98, Microsoft began to integrate tightly web technology into its operating system. Using the Active Desktop of Windows 98, user can view and access desktop objects that reside on the Internet as well or local files and applications. The Windows 98 desktop is a web page with HTML links and features that exploit Microsoft's ActiveX controls. Windows 98 also provides better system performance along with easier system diagnostics and maintenance. Besides that, Windows 98 also introduced Internet Connection sharing that allows a single Internet connection to be shared over multiple networked computers.

Microsoft Windows Millennium is an update to Windows 98. At first glance the interface looks almost identical to Windows 98 but Microsoft has actually included many changes and enhancements that will please the home user. For example, improvements have been made to the key areas such as System Stability, Digital Media, Home Networking, and Online Improvements.

2.6.1.2 Windows 2000

The Windows 2000 Server operating system is designed to let user increase the value of their existing investments while lowering overall computing costs. Specifically, Windows 2000 Server is easier to deploy, configure, and use because it provides centralized, customizable management services.

Windows 2000 Server provides services that let user build and deploy servers more quickly. The Configure Your Server Wizard significantly reduces the time it takes to build a server and reduces the likelihood of error. Additional new Wizards reduce the time it takes to create new Web sites, create virtual directories, manage security settings, and manage security certificates. And, with the SysPrep utility, user can dramatically reduce the time it takes to build completely configured Windows 2000-based servers as compared to installing and configuring those same servers by hand.

Additionally, Windows 2000 Server allows user to configure their network more easily. Moreover, it provides services that manage the trust relationships between domains in any organization, and also automated replication and local caching of DNS and DHCP information so user's network is robust and responsive.

Windows 2000 Server is designed to address all of the concerns about controlling computer's configuration of individuals and groups of users based on user's job responsibilities and computer skills. It provides powerful management services through infrastructure enhancements as well as tools built on the infrastructure. Windows 2000 Server delivers powerful, comprehensive management services to better manage servers, networks and Windows-based desktops.

2.6.1.3 Unix

The UNIX operating system was designed to let a number of programmers access the computer at the same time and share its resources. The operating system coordinates the use of the computer's resources, allowing one person, for example, to run a spell check program while another creates a document, lets another edit a document while another creates graphics, and lets another user format a document - all at the same time, with each user oblivious to the activities of the others.

The UNIX operating system controls all of the commands from all of the keyboards and all of the data being generated, and permits each user to believe he or she is the only person working on the computer. This real-time sharing of resources makes UNIX one of the most powerful operating systems ever.

Although UNIX was developed by programmers for programmers, it provides an environment so powerful and flexible that it is found in businesses, sciences, academic, and industry. Many telecommunications switches and transmission systems also are controlled by administration and maintenance systems based on UNIX.

A major contribution of the UNIX system was its portability, permitting it to move from one brand of computer to another with a minimum of code changes. It also meant that the operating system could be upgraded without having all the customer's data inputted again. And new versions of UNIX were backward compatible with older versions, making it easier for companies to upgrade in an orderly manner.

2.6.1.4 Linux

Linux is a free UNIX workalike operating system. It comes with full source code and oodles of UNIX freeware including the GNU C (and C++) compiler, Perl and Tcl/Tk. Linux runs on a variety of computer architectures, including ARM, SPARC, Alpha, PowerPC, M68k, MIPS, and Intel.

Linux supports most Intel PC hardware. Some of the latest hardware options will likely have only limited support under Linux. The operating system also supports a wide variety of older hardware.

Especially in a business environment, Linux has mostly acted as a server. With Linux, users typically install it on an older, unused PC. Linux then starts providing network services such as file or print sharing. Cisco, for example, uses Linux systems as print servers on its large internal network. Many University sites use Linux as a server.

Through a program called SAMBA, Linux can act as a Windows file and print server. In a lot of organizations, Windows remains on the desktop and Linux stays in the back room. Users can save a lot of money this way.

Overall, basically with Linux, user can turn their PC into a UNIX workstation. Linux is an ideal platform for many potential users:

- ❖ **Users** who want to learn more about the UNIX operating system and the X Window System.
- ❖ **Internet surfers** who want a powerful platform for cruising the Internet.
- ❖ **System administrators** who want an alternative to expensive UNIX workstations, either in their workplace or at home.

- ❖ **Programmers** who want a cheap home or small-business platform for developing software that can be used on other, more powerful UNIX systems.

• **2.6.2 Web Languages and Technologies**

2.6.2.1 Web Application Languages

a) HTML

HyperText Markup Language (HTML) is the language used to prepare web hypertext documents. HTML contains commands, called elements or tags, to mark text as headings, paragraphs, lists, quotations and so on. It also has tags for including images within the documents, for including fill-in forms that accept user input, and most importantly for including hypertext links connecting the document being read to other documents or Internet resources such as anonymous File Transfer Protocol (FTP) sites. It is this last feature that allows the user to click on a string of highlighted text and access a new document, an image, or a movie file from a computer thousand of miles away. This can be accessed through a Uniform Resource Locator (URL), which is included in the HTML markup instructions and is used by the user's browser to find the designated resource.

The URL may be points to other HTML documents, pictures, sound files, movie files, or even database search engines. They can be downloadable programs in Java or other languages. They can also be located on the user's computer or anywhere on the Internet. In fact, they can be accessed from HTTP servers or from FTP, Gopher or other servers. The URL is an immensely flexible scheme, and in combination with HTML, yields an incredibly powerful package for preparing a web of hypertext

documents linked to each other. This image of interlinked resources is in fact the vision that gave rise to the name, World Wide Web.

Writing good HTML documents involve both technical issues and design issues. Technical issue includes proper construction of the document while design issues ensure that the information or content is clearly presented to the user. HTML can be used to create web pages without any specialized software in less time that it takes to schedule and wait for an appointment with a highly paid HTML wizard. It is a fact that this language can be learned very fast by example.

b) Dynamic HTML

Dynamic HTML (DHTML) is not a scripting language (like VBScript, Jscript or JavaScript), but merely a browser feature or enhancement that gives anybody's browser the ability to be dynamic. DHTML is the combination of several built-in browser features in fourth generation browsers that enable a web page to be more dynamic. It is a collection of features that together, enable user's web page to be dynamic. "Dynamic" is defined as the ability of the browser to alter a web page's look and style after the document has loaded.

The technology of DHTML is currently as its development stage, with Netscape 4 and Internet Explorer 4 differing quite greatly in their implementation of this great technology. One DHTML is impossible to function in both browsers properly. Furthermore, the two browsers are at different stages in their development of DHTML. However, it seems that DHTML in Internet Explorer 4 is far more powerful and versatile than Netscape 4.

b) XML

XML is a markup language for documents containing structured information. It is a set of rules for designing text formats that let user structures their data. XML is not a programming language, and anybody don't have to be a programmer to use it or learn it. XML makes it easy for a computer to generate data, read data, and ensure that the data structure is unambiguous. XML avoids common pitfalls in language design. It is extensible, platform-independent, and it supports internationalization and localization. XML is fully Unicode-compliant.

XML was created so that richly structured documents could be used over the web. The only viable alternatives, HTML and SGML, are not practical for this purpose. HTML comes bound with a set of semantics and does not provide arbitrary structure. SGML provides arbitrary structure, but is too difficult to implement just for a web browser. While XML is being designed to deliver structured content over the web, some of the very features it lacks to make this practical, make SGML a more satisfactory solution for the creation and long-time storage of complex documents.

2.6.2.2 Technologies

The technology being discussed in this section refers to web server technologies in which scripts are run on the server instead of on the browser. When scripts run on the server rather than on the client, the web server does all the work involved in generating the HTML pages that are sent to the browsers. There are no worries whether a browser can process a web page or not as the server does all the processing for it. Below, we analyze the different technologies for server side scripting.

a) ASP

Microsoft's Active Server Pages (ASP) technology is a powerful tool for building web sites that incorporate dynamic content. That means, Active Server Pages provides the capability for the Web server to process application logic and then deliver standard HTML to the client browser. ASP is a 32-bit, multithreaded service that runs under Windows NT Server. Fundamentally, building ASP applications involves creating .asp files. ASP applications are:

- ❖ Completely integrated with HTML file
- ❖ Easy to create, with no manual compiling or linking of programs required
- ❖ Object-oriented and extensible with ActiveX server component.

Developers can use ASP to include executable script directly in the HTML files. HTML development and scripting development become the same process, enable developer focus on the look of the web sites.

ASP is integrated into Windows NT Server, so it knows when a file has changes. A changed script is automatically compiled the next time it is request. Besides that, ASP applications are easy to develop using ASP scripting. Any scripting language can be used but developers has to provide the appropriate scripting engine if it is not provided. ASP provides scripting engine for Microsoft Visual Basic Scripting Edition (VBScript) and JScript. ASP generated content is compatible with standard web browser.

b) CGI

The Common Gateway Interface (CGI) was one of the first methods used to create dynamics HTML. Programming in CGI provide a standard communication and

processing mechanism between the requesting client browser, the gateway program and the HTTP server. The CGI programs help create a standard interface with the HTTP server to eliminate having to learn the specifics of Hypertext Transfer Protocol.

CGI programs are usually written in a scripting language such as the Practical Extraction and Report Language (PERL). When script is called on the web server, the web server treats the PERL script as a separate executable. This executable program is not limited to just one script; it can consist of multiple scripts running on separate machines.

However, because the hosting server treats CGI applications a separate executable, a new process is created for each instance in which the CGI application is called. Creating new process on the server is a very expansive resource task and can cause significant resource drain and performance issues. Furthermore, CGI applications suffer from the inability to share information across applications. This is because each new CGI process is created within its own memory space and cannot dynamically share information with other memory spaces of other instantiated CGI program.

c) ISAPI

The Internet Service Application Program Interface (ISAPI) builds on the lesson learned from shortcoming found in CGI application. ISAPI shares the same functional aspects of CGI programming but differ from traditional CGI programming in the way the script is executed. ISAPI relies on loading scripts into HTTP server's memory space to reduce the resource drain required to create a new process. The significance of using shared memory spaces is that all the resources made available to the HTTP service are now made available to the ISAPI applications.

However, in most situations, often the greatest strength of a product is also its greatest weakness. Careful and thorough coding and testing must be used when creating an ISAPI application. Because the ISAPI application shares the same memory space as the HTTP server, if the ISAPI application crashes, the HTTP server can also be brought down. If the ISAPI application terminates without cleaning up the corrupted memory space, runaway processes or memory leaks could result.

2.6.2.3 Scripting Language

There is no definition of a scripting language. Sometimes the term is used to make a distinction from compiled languages. However, some languages like C or C++ can be used for scripting as well as full applications. The term scripting is also used because a language will react to, control, or “script” a series of events. Even macro languages built into PC applications like spreadsheets, databases, word processors, and multimedia applications are now often called scripting languages. The purpose of most scripting languages is to extend the capabilities of applications. This section will describe the different scripting languages that are most popular today.

a) JavaScript

JavaScript is the scripting language of the Internet. It is the most popular scripting language on the World Wide Web and is used in millions of Web pages to power rich, interactive content and increasingly powerful web applications. JavaScript can be used both on the client (CSJS) and on the server (SSJS). The JavaScript language can also be used across browsers, applications, platforms, and devices, making it the language of choice for building next-generation web applications.

Server-side and client-side JavaScript share the same core language. This core language corresponds to ECMA-262, the scripting language standardized by the European standards body, with some additions. It also defines other language features such as its expressions, statements, and operators. Although server-side and client-side JavaScript use the same core functionality, in some cases they use them differently. The components of JavaScript are illustrated in Figure 2.3.

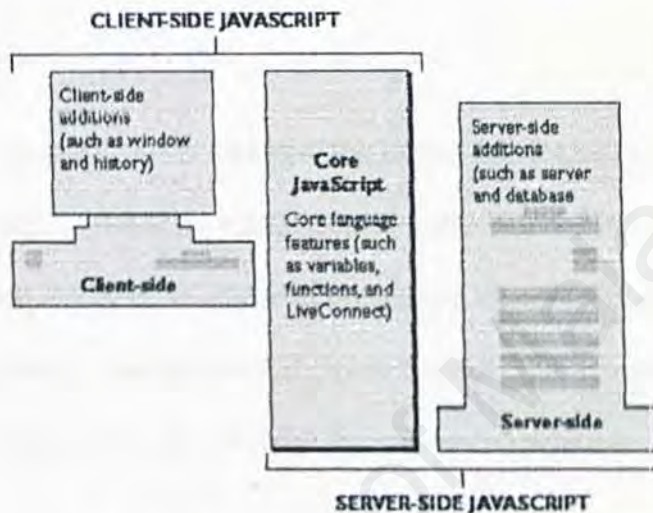


Figure 2.4 : The JavaScript language

Client-side JavaScript (or Navigator JavaScript) encompasses the core language plus extras such as the predefined objects only relevant to running JavaScript in a browser. Server-side JavaScript encompasses the same core language plus extras such as the predefined objects and functions only relevant to running JavaScript on a server. This guide provides information and instructions for using the core and client-side JavaScript.

Client-side JavaScript is embedded directly in HTML pages and is interpreted by the browser completely at runtime. Because production applications frequently have

greater performance demands upon them, JavaScript applications that take advantage of its server-side capabilities are compiled before they are deployed.

JavaScript is a simple to comprehend, easy to use, general purpose scripting language. When used in conjunction with a Web browser's Document Object Model (DOM), it can produce powerful dynamic HTML browser-based applications, which also can feature animation and sound.

b) JScript

JScript is the Microsoft implementation of the ECMA 262 language specification. It is a full implementation, plus some enhancements that take advantage of capabilities of Microsoft Internet Explorer. JScript is an interpreted, object-based scripting language with fewer capabilities than full-fledged object-oriented languages like C++ and Java, JScript is more than sufficiently powerful for its intended purposes.

JScript is not a cut-down version of any other language (it is only distantly and indirectly related to Java, for example), and it is not a simplification of anything. It is, however, limited. You cannot write standalone applications in it, for example, and it has little capability for reading or writing files. Moreover, JScript scripts can run only in the presence of an interpreter, either in a Web server or a Web browser.

JScript is a loosely typed language. That means user do not have to declare the data types of variables explicitly. Moreover, in many cases JScript performs conversions automatically when they are needed.

c) VBScript

VBScript, or by its full name, the Microsoft Visual Basic Scripting Edition language, is a scripting language or more precisely a "scripting environment", which can enhance HTML Web pages by making them active, as compared to a simple static display.

Specifically, VBScript was created by Microsoft to use either as a client-side scripting language for the Microsoft Internet Explorer (versions 3.0 and later) or as a server-side scripting language with the Microsoft Internet Information Server (versions 3.0 and later). A primary advantage for using the server-side approach is that the server processes the VBScript before it is transmitted to the client. Therefore, the client only receives an HTML page.

In contrast, by using the client-side approach, user purposely transfer the workload to the browser in order to reduce the workload of the server. Unfortunately, older or non-Microsoft browsers may not be able to correctly interpret and display the transmitted file. In addition to this, the source code is exposed to the browser user. On the brighter side, a client-side program can produce a more-responsive application, since user input can be processed on the client machine, and not sent back to the server for processing.

The true importance of VBScript is that it is the default language of Active Server Pages (ASP). ASP is an exciting technology from Microsoft that is of significant value to developers. ASP extends standard HTML by adding built-in objects and server-side scripting, and by allowing access to databases and other server-side ActiveX components. All of this means that it is now even easier than ever to make

your Web pages as dynamic and enticing as you desire. For many Web-application developers, VBScript may very well be the most important programming language.

2.6.2.4 Web Application Development Tools

This section will attempt to describe the various tools considered for use during implementation of the Creative Wizard On Web project. Web application development tools are basically editors used to write and develop web pages. There are many types of web application development tools in the market today; however, the study below will only take into account several of the more popular tools in the market.

a) Microsoft FrontPage 2000

The Microsoft FrontPage 2000 Web site creation and management tool gives users everything they need to easily create and manage great Web sites. FrontPage 2000 allows users to easily create great-looking Web sites exactly the way they want. They can give their Web site a professional and consistent look across all pages, import and edit HTML just as they like, and use the latest in Web technology.

FrontPage 2000 allows users to easily update sites and quickly and flexibly manage Internet or intranet Web sites. Users can set up and maintain their site, easily monitor the condition of their Web site, and make updates. Workgroups or teams can work together on sites, and companies can install and administer FrontPage 2000 across their company. Furthermore, FrontPage 2000 allows users to work together with Microsoft Office to save time. It was designed to function more like Microsoft Office so that users can get up and running with FrontPage more quickly than ever.

b) ColdFusion

ColdFusion provides components that enable the creation of dynamic, database-powered Web applications. ColdFusion possesses a number of features that make it potentially appealing for Web development. It offers a high-level programming model not drastically different from the HTML files and editors that many Webmasters already know. It has been designed to allow for the integration of custom modules, important for organizations looking to tailor software to fit their specific needs. And it supports connectivity to databases. More specifically, the designers of ColdFusion built the product with these four goals in mind:

- ❖ rapid application development
- ❖ scalability
- ❖ integration
- ❖ security

Rapid application development, or RAD, is a relative thing. In this case, the term refers to ColdFusion's visual tools and high-level interfaces. Instead of writing server software in a system programming language like Java or C++, developers can use the ColdFusion Markup Language (CFML) that has syntax very similar to HTML, XML, and other-tag based formats. The product also includes visual debugging and administration tools.

ColdFusion's main scalability feature is support for dynamic load balancing and automatic fail-over in clustered environments. In other words, the product can be configured to use and divide work amongst multiple servers. For high-traffic, very dynamic environments, this may provide substantial benefit.

c) Dreamweaver UltraDev 4.0

Dreamweaver UltraDev 4.0 is a one powerful tool to create professional websites and also with its features, it is the easiest way to build powerful Internet applications. Dreamweaver UltraDev 4.0 let user achieve complete control over code and design where they can build the site they want, the way they want it.

Built on the Dreamweaver 4 foundation, Ultradev 4 now adds remote database connectivity, allowing developers to use the actual database that will be deployed; developers can now see what their pages will look like with the actual data while designing the application.

The combination of the clean, flexible client-side page-creation interface of Dreamweaver 4 and server-side behaviors and database features of Ultradev is much more preferred by most user. While it may not be the only tool they'll use, it is a hard-working must-have for professional Web developers who need database support, but not heavy-coding headaches.

2.6.2.5 Web Interface Design Tools

a) Macromedia Flash 5.0

Macromedia Flash 5.0 is the fastest way to create rich Internet content and applications with a better return on investment. Its powerful video, multimedia and application development features allow the creation of rich user interfaces, online advertising, e-Learning courses and enterprise application front-ends.

Furthermore, Flash 5.0 also expands the already impressive possibilities of what anybody can do with streaming Web media. Coders will appreciate the new

rudimentary HTML rendering, built-in XML parser, and advanced scripting engine. Animators and graphic designers will be pleased by the inclusion of new tools, beefier import options, and integration with other Macromedia products.

All in all, Flash 5.0 is an exciting product. The new features make it a must-have for any developer who wants to create rich but lightweight Web media.

b) Adobe Photoshop

Adobe Photoshop is an image-editing standard software. It provides a comprehensive toolset, unmatched precision, and powerful creative options to help user create professional-quality images for Web, print, and emerging media. Other than that, it is also developed to meet any creative or production demand and to handle the widest variety of image-editing tasks in the most efficient way.

With its comprehensive set of retouching, painting, drawing, and Web tools, Photoshop helps user complete any image-editing task efficiently that they can experiment freely without sacrificing efficiency. Photoshop also gives user the tools they need to keep the work on track and bring it in on deadline.

Adobe Photoshop delivers high-powered image editing, photo retouching, and compositing tools to help user get professional-quality results. It offers a lot of tools with their specific task to help user alter their images the way they want it such as edge smoothing, sharpening controls, healing brush, color correction etc.

The powerful Photoshop paint engine lets user simulate traditional painting techniques, including charcoal, pastel, and wet or dry brush effects. They can choose

from the many preset brush styles or use the Brushes palette to create their own unique effects. With its drawing tool, user can draw resolution-independent vector shapes instantly with the line, rectangle, ellipse, polygon, and custom shape tools.

Adobe Photoshop Web tools, lets user produce exceptional imagery for the Web and wireless devices along with the helps from ImageReady, which ships with Photoshop. There are slicing tool, optimization tools, rollovers palette, animation palette and other Web tools in Photoshop to help user create their style of user interface.

2.6.2.6 Browser

A browser is an application program that provides a way to look and interacts with all the information on the World Wide Web. The word “browser” seems to have originated prior to the Web as a generic term for user interfaces that let user browse text files online. By the time the first Web browser with a graphical user interface was invented (Mosaic, in 1992), the term seemed to apply to web content, too.

A web browser is technically, client program that uses the Hypertext Transfer Protocol (HTTP) to make requests of web servers throughout the Internet on behalf of the browser user. A commercial version of the original browser, Mosaic is in use. Many of the user interface features in Mosaic, however went into the first widely used browser, Netscape Navigator. Microsoft followed with its Internet Explorer.

Today, these two browser are highly competitive and the only two browsers that the vast majority of Internet users are aware of. Although the online services, such as America Online, CompuServe and Prodigy, originally had their own browser. Virtually all now offer the Netscape or Microsoft browsers. Lynx is a text only browser for Unix shell and VMS users. Another recently offered browser is Opera.

a) Microsoft Internet Explorer

Internet Explorer is a program, which enables users to access the World Wide Web (WWW), a network of file servers that use hypertext links to find and access files. It provides a private, reliable, and flexible browsing experience for users of Windows 98 and Windows 98 SE, Windows Millennium Edition, Windows NT® Workstation 4.0, and Windows 2000.

One of the most compelling features of Internet Explorer for all users is the tool to help user maintain the privacy of their personal information on the Web. These tools allow them to control how and under what circumstances their personal information is shared on Web sites. The latest version of Internet Explorer has also taken steps to improve Web browser reliability with the option of fault collection services. With the new innovative browser capabilities, including media playback, automatic picture resizing, and more, anybody can experience the Web exactly the way that they want

Internet Explorer is also a feature-rich platform for building Web-based applications and developing informative content for users. The browser provides enhanced support for standards-based Internet technologies and improves the ease and speed with which developers can take advantage of these technologies. Improvements to the browser-programming model, such as enhanced DHTML features, further enrich the Web development platform.

In summary, Internet Explorer is the fastest, most feature packed, most innovative browser available in the world today. The combination of integrated document browsing, speedy Web performance and new features make it a very tough combination to beat.

b) Netscape Navigator

Netscape Communicator is a comprehensive set of components that integrates browsing, email, web-based word processing, and chat to allow users to easily communicate, share, and access information. One of the main components of Netscape Communicator is Netscape Navigator.

Netscape Navigator is the world's premier browser. Based on open standards, Navigator is the cornerstone of Netscape Communicator's ability to access the wealth of information and network applications available on intranets, extranets, and the Internet. Following are the features on Netscape Navigator:

- ❖ Suggests sites and information related to the web page users are currently viewing (the What's Related feature).
- ❖ Lets user type common words into the Location field to find what they want (the Internet Keywords feature).
- ❖ Screens out offensive web content by using NetWatch, which is based on the PICS standard.
- ❖ Supports cascading style sheets, absolute positioning, and HTML fonts.
- ❖ Supports JDK 1.1 on multiple platforms with performance enhancements.
- ❖ Supports JavaScript 1.3, which is EMCA-252 compliant.
- ❖ Includes context-sensitive help.

The Smart Browsing feature in Netscape Navigator can understand common words (in addition to traditional URLs) and use them to guide user to the correct information. It can filter out pages with inappropriate material and intelligently recommend other web sites and information related to the material users is currently viewing.

As web content continues to be more interactive and more like an application, support for the latest standards-based web technology is critical. Navigator has integrated support for the Java Development Kit (JDK) 1.1, including AWT 1.1.5, JavaBeans, and JNI. Navigator also supports JavaScript 1.3, which is ECMA-252 compliant.

c) Opera

Opera is user-friendly, secure and has powerful features that make surfing easy, safe, and fun. It is renowned for being the world's fastest browser. This is particularly important on Internet devices with slow connections, but surfing with greater speed is just as enjoyable on a new desktop computer.

Opera is much smaller than other major browsers. Yet, it is full-featured and offers more functions than the competition. Its installation takes merely a minute and does not eat up user's hard disk space. Opera also functions quite well on systems with limited resources.

Furthermore, Opera supports the most advanced and widespread standards for encrypting sensitive information, and has been named the "most secure browser you can use" by a number of publications. Opera's security protections are meant to guard user's browsing habits, as well as to protect them when they use personal information on Web sites. Below are some other of the important features of Opera:

- ❖ Supports all common Web standards, such as HTML, XML, XHTML, CSS, and HTTP, and implements them according to the official recommendations.
- ❖ Remember all user 's windows and Web pages between surfing sessions. This lets user continue surfing exactly where they left off, regardless of how many windows they had open.

- ❖ Supports all common image standards, and can play audio and show animations. Multimedia and images can be turned on and off for faster page loading.
- ❖ Supports the File Transfer Protocol (FTP), which means that user can browse and download files from an FTP server.

• 2.6.3 Database Management System

2.6.3.1 MySQL

MySQL is a database management system. A database is a structured collection of data. It may be anything from a simple shopping list to a picture gallery or the vast amounts of information in a corporate network. To add, access, and process data stored in a computer database, you need a database management system such as MySQL Server.

MySQL is a relational database management system. A relational database stores data in separate tables rather than putting all the data in one big storeroom. This adds speed and flexibility. The tables are linked by defined relations making it possible to combine data from several tables on request. The SQL part of "MySQL" stands for "Structured Query Language" - the most common standardized language used to access databases. MySQL software is Open Source. Open Source means that it is possible for anyone to use and modify. Anybody can download the MySQL software from the Internet and use it without paying anything.

The MySQL database server is very fast, reliable, and easy to use. MySQL Server was originally developed to handle large databases much faster than existing solutions

and has been successfully used in highly demanding production environments for several years. Though under constant development, MySQL Server today offers a rich and useful set of functions. Its connectivity, speed, and security make MySQL Server highly suited for accessing databases on the Internet.

2.6.3.2 Microsoft SQL Server 7.0

Microsoft SQL Server version 7.0 is the most robust database for the Windows Family, the Relational Database Management System (RDBMS) of choice for a broad spectrum of corporate customers and Independent Software Vendors (ISVs) building business applications. Customer needs and requirements have driven significant product innovations in ease of use, reliability and scalability and data warehousing so that is why SQL Server 7.0 is invented. SQL Server 7.0 runs on Windows NT 4.0 or Windows 2000.

Microsoft SQL Server 7.0 has been redesigned to provide important new server architecture and graphical administration features, while maintaining ANSI and SQL Server 6.x compatibility. Enhancements have also been made to SQL Server architecture, server functionality, and development tools to make it more flexible and reliable. SQL Server version 7.0 also allows user to detach databases from a server, then reattach them to another server, or even attach the database back to the same server. If someone have a SQL Server database file, they can tell SQL Server when they connect that they want that database file attached with a specific database name.

Most Visual Basic applications involve database programming of some kind, and SQL Server 7.0 is the database of choice for many Visual Basic programmers. It is a

natural next stage for VB developers wanting to expand their database skills. With this, it's proven that Microsoft SQL Server 7.0 is a powerful, scalable, very fast, stable and also, easier to manage database server.

2.6.3.3 Microsoft Access 2000

Since its introduction in 1992, Microsoft Access has become one of the most versatile applications in the Office suite. Access 2000 makes it easy to get the information user's need and provides powerful tools that help developers and users organize and share their database so that they can make better decisions.

Microsoft Access 2000 allow user to build powerful business solutions more easily and find answers faster. Plus, with new tools in Access 2000, it enable Web collaboration and improve productivity of work by user by making the data immediately available to any coworker. Access 2000 also introduces a host of new capabilities in terms of productivity, Data Access Pages (databound HTML documents), SQL Server integration, programmability, worldwide support, and new Jet database engine features.

Microsoft Access is a database and more specifically a relational database. All the objects (tables, queries, reports etc) and the data is stored in a single .mdb file, although the objects can be split from the data if required.

• 2.6.4 Adobe Portable Document Format

Adobe Portable Document Format (PDF) is the open de facto standard for electronic document distribution worldwide. Adobe PDF is a universal file format that preserves

all the fonts, formatting, graphics, and color of any source document, regardless of the application and platform used to create it. Adobe PDF files are compact and can be shared, viewed, navigated, and printed exactly as intended by anyone with Adobe Acrobat Reader.

Anyone, anywhere can open a PDF file. All they need is Acrobat Reader software. PDF files always display exactly as created, regardless of fonts, software, and operating systems. PDF files always print correctly on any printing device. Tagged PDF preserves a document's visual integrity so it can be viewed on Palm OS devices, on the Web, or in print. Content in PDF documents can be saved in Rich Text Format and reused in other applications. Tagged PDF files contain information on content and structure, which make them accessible with the help of screen readers.

Adobe PDF also offers the following benefits:

- ❖ Adobe PDF files can be published and distributed anywhere: in print, attached to e-mail, on corporate servers, posted on Web sites, or on CD-ROM.
- ❖ Compact Adobe PDF files are smaller than their source files, can be downloaded a page at a time for fast display on the Web, and don't slow down network.

2.7 CURRENT AVAILABLE SYSTEM

A survey has been done on printable greeting card Web sites and software. Most of the Web sites offer more than one type of cards and not specifically birthday cards and the same goes with the software. Below are the results of my observation:

• 2.7.1 Greeting Haus



Figure 2.5: Greeting Haus Screen Shot

Greeting Haus is a Web site that offers do-it-yourself printable greeting card. It is developed by CB Designs Studio. And not only this Web site offer greeting card, it also feature invitation cards and printable calendars to be made by users themselves. They can choose greetings from a wide variety of printable combinations.

However this site require users to be a member before they can have full access to every document on this site. Subscribers will have full use of all printable files during the duration of his/her membership. Upon expiration of the subscription term, access to all Greeting Haus member files also expires unless renewed by the subscriber.

Members do not purchase files, only access to files for personal printing during the

term of subscription.

Its user interface is quite simple and easy to navigate. The first page shows a brief introduction to the site. There's a direct link to go to the greeting cards page of user's choice. If they want to get a printable birthday card, they just have to click the 'Birthday' option and it will link to the one of three pages as shown below:



Figure 2.6: Birthday card section

Every page of birthday card consists of 6 different styles of designs. To print a card, there's a step-by-step guide for the ease of use by subscribers. The cards chosen will give a quality results and easily printed if users make the right paper choice. The steps to print are as follows:

- 1) Download selections to the computer/desktop
- 2) Open with Acrobat Reader (version 4 or higher)
- 3) Print on 8.5" x 11" card stock or suitable papers

• 2.7.2 Magical Kingdom Greeting Cards

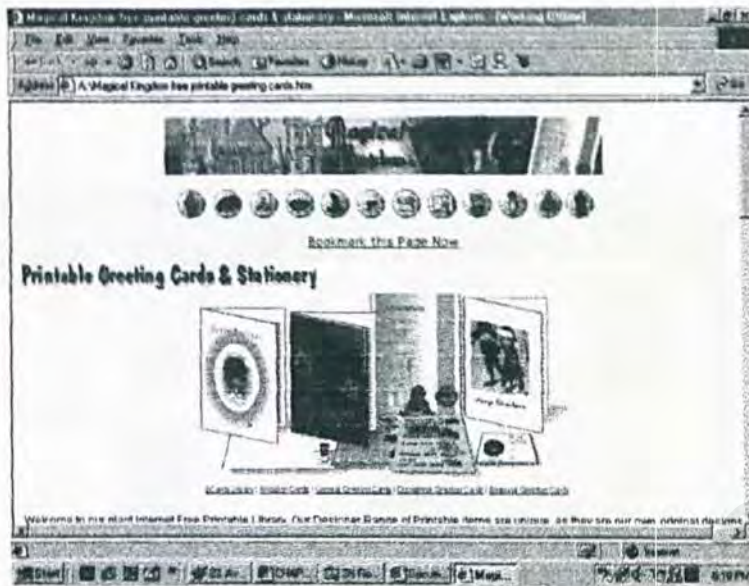


Figure 2.7: Magical Kingdom Screen Shot

Magical Kingdom is giant Internet Free Printable Library. Their Designer Range of Printable items are unique, as they are their own original designs. In order to maintain the original commercial quality, all their printable cards & stationery are published in PDF format. There are over 1500 printable items to choose from. User can download them free for domestic use.

Basically, all cards offered in this site are divided into several sections. There are Invitation Cards, General Greeting Cards, Occasional Greeting Cards, and Seasonal Greeting Cards sections. Other than that, Magical Kingdom also offers e-card that can also be print. Types of cards and their themes are listed in each section. For example, birthday card is put in Occasional Greeting Cards menu along with its theme that just need to be chosen.

Each theme listed offers a few styles of designs. Users just need to click on the picture

to download the card and then they can print them using the Acrobat Reader. Then they have a choice either they want to select and print the greeting message from the Web site or they can just write down the message on their own.

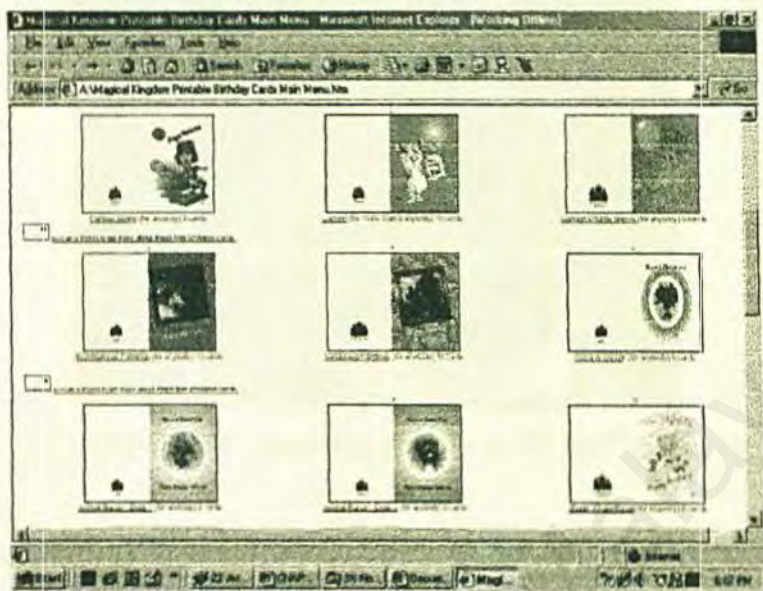


Figure 2.8: Magical Kingdom Greeting Cards Choices

Overall, Magical Kingdom is a very nice Web site. Variety of greeting cards can be found here. Although the user interface is quite confusing and there are a lot of steps to be followed, still there's no major flaw that can make users think twice to use it.

• 2.7.3 Greeting Card Magic PC Software



Figure 2.9: Greeting Card Magic PC Software

This software package let user design and print customized greeting cards, flyers, and certificates and also cards to send via e-mail. Plus it comes with special bonus that is Photo Editor, which gives user the chance to add photos to cards and retouch, resize, or apply special effects as desired.

Greeting Card Magic PC Software comes with Wizard to help drive the card creation process. A wizard control is used to create a card from scratch. The creation process is easy with the accessible tool bar and step by step menu controls.

Followings are few of the features available in Greeting Card Magic PC Software:

- ❖ Personalize templates by changing fonts and text or adding graphics and photographs. Or user can create their own card from scratch using the step-by-step wizard controls.
- ❖ Select from 500 pre-made templates suitable for a variety of occasions including birthdays, anniversaries, Christmas, Valentine's Day, and more.

- ❖ 1,000 clip art images. Include full color clip art images for the greeting card design. User may also import clip art from other programs.
- ❖ 1,500 phrases and 200 fonts. Professionally authored phrases capture the perfect sentiment for any occasion.
- ❖ Eight card sizes. Includes top down fold, fold over, tri-fold, and four fold greeting cards. Also perfect for certificates and flyers.

2.8 SUMMARY

This chapter outlined and described in detail the various issues and topics researched throughout the project. The information was derived mainly from books and web sites, which were both popular and reliable.

The research was important because it enable better understanding of the different products. This allowed the best combination of platform, software and technologies to be selected to design, develop and implement the Creative Wizard On Web project. However, it is to be mentioned that there remain many more products and technologies that were not covered in the Literature Review. The topics covered in this chapter were only some of the more popular products. Nevertheless, the research done was sufficient for the purpose of choosing the appropriate tools to develop and implement this project.

The next chapter, methodology will attempt to explain in detail the method to be used in Creative Wizard On Web.

CHAPTER 3

METHODOLOGY

CHAPTER 3 METHODOLOGY

3.1 INTRODUCTION

Methodology is the science of how a system is developed. This chapter will describe the methodology used while developing the Creative Wizard On Web project.

3.2 WATERFALL MODEL

The waterfall model uses a systematic, sequential approach to system development that begin at the system level and progresses through analysis, design, coding, testing and maintenance. This model can be very useful in helping developers lay out what they need to do. Its simplicity makes it easy to explain to customers.

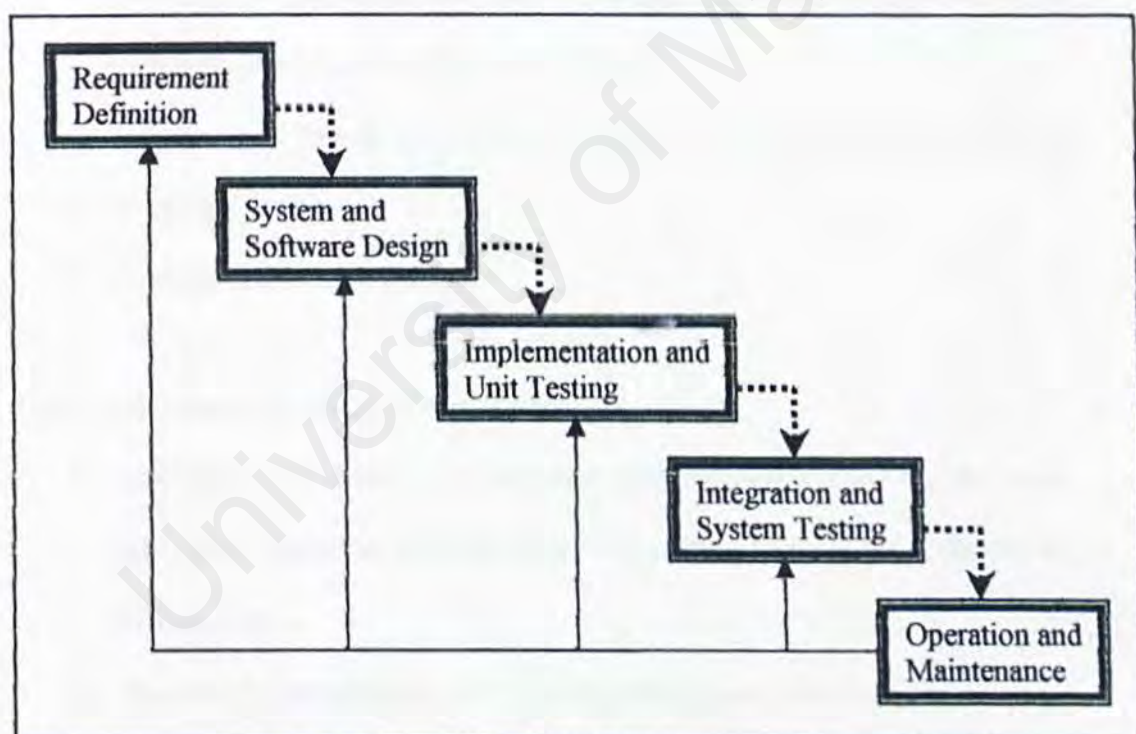


Figure 3.1: Waterfall Model

The Waterfall Model (Figure 3.1) was chosen as the development model of choice as it offered distinct advantages which are relevant to the Creative Wizard On Web project. The explanation of each Waterfall phases are given below:

Requirements analysis and definition:

- ❖ System requirements defined with customer. All the requirements defined can be determine from the project objective. For my project, the objective is to build a web-based application that allow users to create a birthday card on their own using all the images, templates and sentiments provided and print them. Also, there's send via e-mail option.
- ❖ Detailed information are set and analyzed by looking into the functional requirements and non-functional requirements of the system.
- ❖ Result should be understandable by both customer and system developers

System and software design:

- ❖ Requirements are decomposed into software and hardware requirements which contribute to the logical design of the system.
- ❖ Accurate data flow procedures are planned so that the processes within the system are correct.
- ❖ A system-architecture is fixed.

Implementation and testing of components:

- ❖ Implicate the translation of the software representation produced by the design phase into a computer readable form. This portion involves the coding of the software system.
- ❖ The system is realized as a set of components (objects, modules, units, ...).
- ❖ Units are individually tested.

Integration and system testing:

- ❖ Units are integrated, integration tests are performed, and the resulting system is delivered.
- ❖ System testing is very important to assure the accomplishment of the software requirements and also to guarantee the quality of the system.

Operation and maintenance:

- ❖ Involve a few changes to correct the system after it has been delivered and used.
- ❖ The changes may involve simple changes to correct existing errors, more extensive changes to correct design error or significant enhancements to correct specification. All the changes to the system are made from time to time depend on the technology development.

However, the Waterfall model has its own drawbacks. One of these drawbacks are its inadequate procedures for dealing with the social system and it does not adequately take into account what impact a system might have on its users via a changed job or changed organizational structure design.

Each methodology researched for example, the Evolutionary Model, Format Transformation Model etc. have its own merits and problems. However, after considering the various factors namely the clear understanding of problems and requirements, the clear separation of phases, the time constraints including other advantages, it was decided that the Waterfall Model best served my objectives.

Following are all the reasons, why I've decided to use Waterfall Model as my methodology:

- ❖ It best describe the engineering practice
- ❖ Testing process is done in each phases or in orderly sequence so it is easy to monitor progression.
- ❖ Simple and easy to understand
- ❖ Easy to identify important situation
- ❖ Easy to separate one phase with another
- ❖ Easy to explain to customers who are not used to the software development process.
- ❖ This model gives a high level view of the software development during the development process.
- ❖ The developers are able to reverse step if there's mistake or change happened.
- ❖ Other software development model are derived from this Waterfall Model.

3.3 SUMMARY

This chapter explains the methodology used in developing my Creative Wizard On Web project along with the explanation about why I've chosen the method. The description about each phases are also included.

CHAPTER 4

SYSTEM ANALYSIS

CHAPTER 4 SYSTEM ANALYSIS

4.1 INTRODUCTION

A complete understanding of software requirements is essential to the success of a software development effort. The requirement analysis task is a process of discovery, refinement, modeling and specification. With requirement analysis, system engineer is able to specify software function and performance, indicate software's interface with other system elements and establish constraints that software must meet.

4.2 ANALYSIS PROCEDURES

The process of analysis involves the following procedures :

- ❖ Problem identification
- ❖ Evaluation and synthesis
- ❖ Modeling
- ❖ Specification

• 4.2.1 Problem Identification

Before a new system can be built, we must identify the problem that needs to be solved in order to ensure the success of this project. For Creative Wizard On Web, the problem is how to store, retrieve and manage a large amount of images and word sentiments in a database system in an effective and efficient way. In additional, another problem would be to determine how to improve the performance of the system in transmitting large image files.

• 4.2.2 Evaluation and Synthesis

In this stage, analysis of the problems need to be done by dividing the problems into smaller parts so that the problem will be easier to be understood and solved.

The following problems are the few example of system requirements that must be considered:

- ❖ What kind of database used to store the images and the sentiments?
- ❖ Using the relational DBMS or object oriented DBMS?
- ❖ How are the images and sentiments stored in the database system?
- ❖ How to index the images and the sentiments?
- ❖ What are the most appropriate tools and technology to be used in building the Web site?

• 4.2.3 Modeling

We create models to gain a better understanding of the actual entity to be built. The model focuses on what the system must do, usually a graphical notation (such as DFD) is used to depict information, processing, system behavior and other characteristic.

• 4.2.4 Specification

The requirement specification is a complete listing that defines what the system should do, it will be used in the system design and system testing.

4.3 REQUIREMENT ANALYSIS

Requirement analysis covers the area of functional and non-functional requirements of the Creative Wizard On Web project. The functional requirement can be categorized to the general user section and the administrator section, where both sections will try to give out a clear picture on how the user interface is going to be. Whereas, the non-functional requirement will discuss the system's constraints along with the standards the system must meet.

• 4.3.1 Functional Requirements

Functional requirement is a functions or characteristics expected by user for the system. It is a combination of all the main modules of Creative Wizard On Web, which are made to communicate internally or externally. The system user are divided into two categories which are the user who would like to print a birthday card and the system administrator. The functional requirements for the system are divided into a few modules as follow:

4.3.1.1 System User

❖ Image (Static Graphic)

One feature that makes up Creative Wizard On Web's birthday card is an image. User can select any image desired by making a query with the search function provided. This search allows the user to type in a word or phrase and the system will search for the existence of the particular input in the field for the selected search criteria in the database whereby the database will display a few images prior to user's request and

description. Any images that is loaded into the Image area can be shaped to fit the empty working sheet.

❖ Sentiments

A sentiment will be a great feature for a greeting card. For Creative Wizard On Web, user can also select a variety of word sentiments provided by making a query to the database. After the sentiment have been chosen, the text properties table will be activated. Then user can select the fonts and choose the desired color for the sentiment. The sentiments will then be loaded into the Sentiments area to make up a full version of user's own creation of birthday card.

❖ Color

On the screen along with the select image and sentiment, there will also be a select color button for user to choose a background color of the card. Upon selecting the button, a color palette will appear where user can select the color they wish and then click OK.

❖ Print Preview

When user is ready to see what their card will look like after they print them, they can preview the card by choosing a Print Preview button at the bottom of the screen. When they finish, they need Adobe Acrobat Reader to print the card.

❖ Print

To print the birthday card, user must have Acrobat Reader installed on their computer to open and print out the card. Any suitable paper is needed to have an amazing end result.

❖ Send via E-mail

Other than print choice, user also can send the card they created via e-mail. There'll be 'Send via E-mail' button next to the Print button if they decided to just send them electronically rather than by hand.

4.3.1.2 System Administrator

❖ Authentication and Authorization

An authentication module is to ensure that only administrators (authorized users) can have access to the system. They are required to submit their identification and password for authentication purposes. Moreover, the administrator are able to perform the maintenance tasks such as add, update and delete the existing records in the database system.

• 4.3.2 Non-Functional Requirements

Non-functional requirements are the constraints under which a system must operate and the standards that must be met by the delivered system. This is a non-functional requirement or constraints describes a restriction on the system that limits the choice for constructing a solution to the problem. These constraints usually narrow my selection of language, platform, or implementation techniques or tools.

❖ Reliability

This system should be reliable which means that it does not produce dangerous or costly failures when it is need in a reasonable manner.

❖ Efficiency

Efficiency in a computer terminology means a procedure that can be called or accessed in an unlimited numbers of times to produce similar outcomes or output at a creditable speed.

❖ Maintainability

A product is maintainability if the programs are easily to modify and test when updating to meet new requirement, correcting errors or more to a different computer system.

❖ Simplicity

Simplicity refers to keep forms and screens properly uncluttered in a manner that focuses the user attention.

❖ Understandability

Understandability in terms of the coding method used, allows other programmers to understand the logic of the program flows. Thus, changes can be made easily upon the necessary program segments without modifying other essential logic of the program. Simple and clear sentences or instruction are displayed so that users can use the system without difficulty.

❖ Robustness

This requirement is referring to the ability of the Creative Wizard On Web to continue operation in spite of unexpected problems. Creative Wizard On Web is able to detect errors in the user input by having a validation for the input field in the client side before it is sent to the server. Therefore, it would be more robust to user error.

❖ User-friendly

The user interface for this Web site should not be too crowded so that it would not confuse the user especially when a wizard is used. Creative Wizard On Web should provide a clear set of step-by-step instructions from choosing a layout preferred to the print instruction. A suitable button such as preview and edit button also must be set before user have finally decided to print the card.

4.4 TOOLS AND TECHNOLOGY CONSIDERED

This section will identify the suitable programming languages, development tools, server, database system and implementation platform that are used to develop Creative Wizard On Web. An analysis has been done in making the decision and after much consideration, I have chosen this set of tools and technologies for the realization of this project. The ideal solutions for this project are easy to develop and deploy, and also easy integration with the latest emerging technologies.

• Platform : Windows 2000

There are a few reasons why I have decided to adopt Windows 2000 as my operating system. First of all, it was build as a next version of Windows NT so the features is improved. As the system administrator, day-to-day maintenance is easier with Windows 2000. I can learn to manage systems from a Windows console much more quickly than I can learn with Windows NT because of the easier delegation, a more consistent user interface, and simple-to-use integrated tools provided in Windows 2000 Server. Furthermore, with Windows 2000, I can reduce time it takes to create new Web sites while reducing the likelihood of error. As a conclusion, the

improvement of Windows 2000 makes it a platform that is easier to deploy, configure and use.

- **Web Application Language : HTML**

Basically HTML is the simplest and easy-to-learn language with a small number of commands, which is very useful for me since I've never had an experience in developing a Web site before. It is a special authoring language used to define how text and graphics appear on a Web page and how different documents and Web resources are linked. My project demand a very high profile, creative layout as well as attractive user interface in order to attract more user to navigate my Web site and so, I choose HTML because it is just the right language to help me get started in achieving my goal.

- **Web Technology : ASP**

After comparing ASP with other applications, I find that ASP is the most suitable tool to help me build Creative Wizard On Web. It is a great tool for creating dynamic Web pages. Among the benefits of ASP applications include its ability to have a complete integration with HTML file and also it is easy to create, deploy data, validate user input and upload files. Furthermore, ASP application can work in all browsers including Netscape, Microsoft Internet Explorer and Opera. With its upgraded version, which is ASP.NET, extension .aspx, I'm sure that creating a Web site will not be a hard work for me.

- **Server-side Scripting Language : VBScript**

The main reason for me to choose this scripting language is because it is the default language for ASP. VBScript was created to use as a client-side or as a server-side scripting language. But due to a few constraints of using VBScript as a client-side scripting language I've decided to make VBScript as the server-side approach after considering the fact that the server processes the VBScript before it is transmitted to the client, which resulted with the client only receives an HTML page.

- **Client-side Scripting Language : JavaScript**

JavaScript is the most popular scripting language on the World Wide Web. I chose JavaScript as the client-side scripting language because it is simple to comprehend, easy to use and is widely supported. Although JavaScript can be used both on the client and server side, I purposely chose JavaScript for client-side only because it gives me an advantage in learning two types of scripting language instead of one. In addition, client-side scripting must be done using JavaScript since Netscape only accepts JavaScript as a legal, client-side scripting language.

- **Web Development Tool : Macromedia Dreamweaver UltraDev 4**

Due to my lack of experience in developing a Web site before, I've done a few research to help me decide which is the best tool to be used and after much consideration, I finally decided to adopt Macromedia Dreamweaver UltraDev 4 as my web development tool. As far as I know, this tool has a better and cozier user interface than Microsoft FrontPage. It is easy to manipulate with better features provided such as buttons and functions making this tool is very helpful for me as a beginner.

- **Interface Design Tool : Macromedia Flash 5 and Adobe Photoshop 6**

My study in Multimedia has introduce me to these two very useful tools. My project, Creative Wizard on Web is a greeting card Web site which demands a very creative, nice-looking interface in order to attract user to use my card. Therefore, I've decided on these two tools plus with my considerable amount of knowledge in both of the tools, I'm sure they will help me to design a great user interface. After all, it is easier to design using familiar tools.

- **Database : Microsoft SQL Server 7.0**

Due to the lack of experience of developing a database even during my period of industrial training, I have to do a lot of research to determine which database management system that suit my purpose. And so, I finally decided that Microsoft SQL Server 7.0 is just the right choice for my Creative Wizard On Web project. SQL Server 7.0 was chosen because it is the best database solution to be used with Windows 2000 Server. Plus, it can handle a large amount of data which useful for me since my system involve a lot of images and sentiment.

4.5 SUMMARY

This chapter on System Analysis describe the functional and non-functional requirements of the Creative Wizard On Web project. Summary of the software and technology used to build the system and the reasons for using those product were explained.

CHAPTER 5

SYSTEM DESIGN

CHAPTER 5 SYSTEM DESIGN

5.1 INTRODUCTION

Design is the creative process of transforming the problem into a solution. And this definition can be related to system design, which is a process through which requirements are translated into a representation of software. Modularity is a characteristic of a good design. The components have clearly defined inputs and outputs. And each component has a clearly stated purpose. Thus, to design a system is to determine a set of components and intercomponent interfaces that satisfy a specified set of requirement.

The design of Creative Wizard On Web has considered the following issues :

- ❖ System functionality design
- ❖ Database design
- ❖ Interface design

5.2 SYSTEM FUNCTIONALITY DESIGN

System functionality design is based on the system requirement stated in Chapter 4. It translates the system requirement into system functionality. This design focuses on the system structure.

As mentioned in the previous chapter, Creative Wizard On Web is divided into two main sections, which are the general user section and the administrator section. Therefore, the functionality of this system is also divided into two main portions as shown in Figure 5.1.

The figure shown is the general functionality of the system. Later I will discuss the detail functional information of the system.

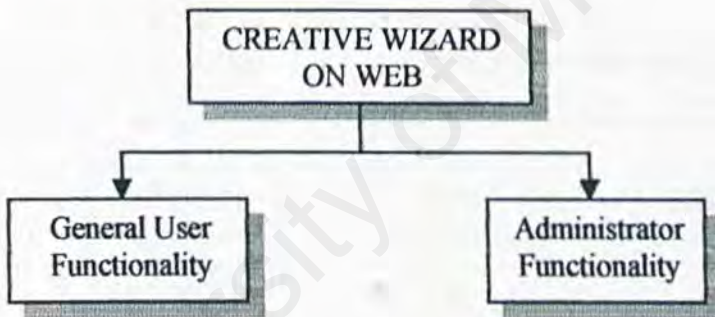


Figure 5.1: Creative Wizard On Web Functionality

• 5.2.1 General User Functionality

The general user functionality is divided into two main module, which are the start from scratch option and secondly, the use ready-made template option. For the start from scratch option, user is given a blank worksheet and its up to them to choose whatever images and sentiments they want to make up a birthday card. The user also can choose any background color they intended for the card. The font and color

choices for sentiments can be selected after they have decided on which sentiment they want.

The second module is use ready-made template. For this module user just have to select any template they desire and they can add a sentiment or edit the background color of the template according to their taste.

After all steps have been taken to make a card, then user can preview them simply by clicking the Print Preview button provided. And after they have satisfied with their creation, they can print them. But for user who wants other option, they also can send the card via e-mail.

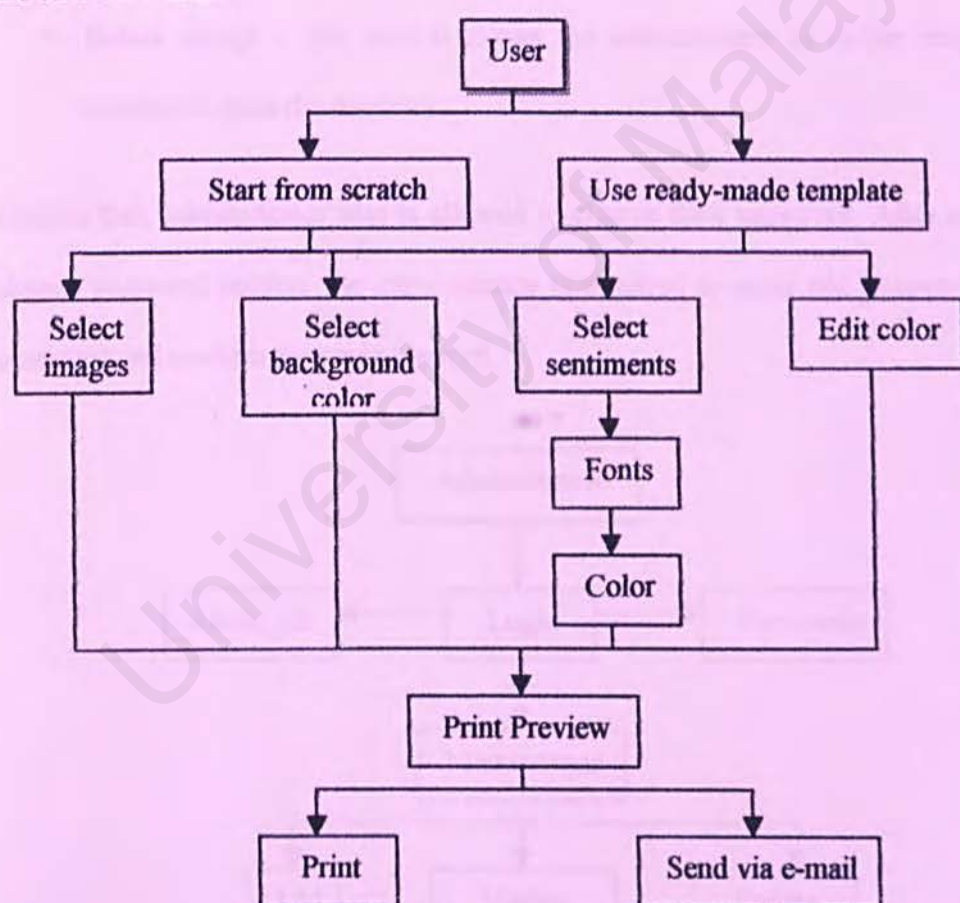


Figure 5.2: General User Structure Diagram

• 5.2.2 Administrator Functionality

As for the administrator functionality, only the administrators (authorized users) is given permission to have access to the system. But first, they are required to submit their identification and password for authentication purposes. Then they are able to perform the maintenance tasks such as add, update and delete the existing records in the database system.

- ❖ **Add image** – this section allows the administrator to add new images and sentiments to the database.
- ❖ **Update/modify image** – this section allows the administrator to modify the detail of the images and sentiments.
- ❖ **Delete image** – this section allows the administrator to delete images or sentiments from the database.

Besides that, administrator also is allowed to change their password. After entering change password section, the administrator is required to enter old password, new password and confirm the new password.

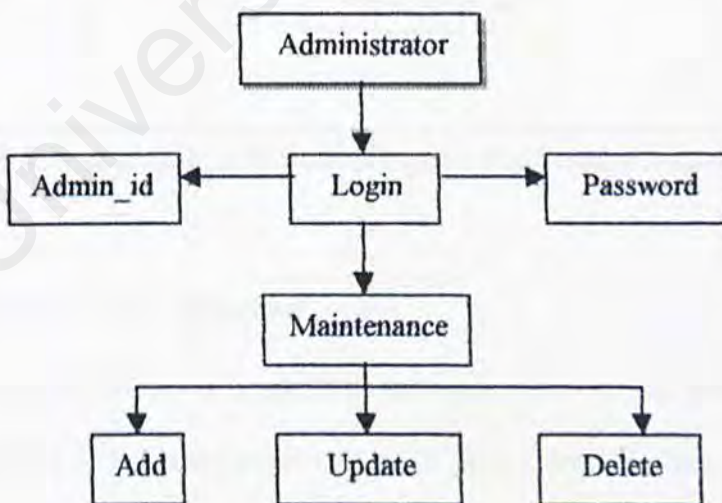


Figure 5.3: Administrator Structure Diagram

• 5.2.2 Administrator Functionality

As for the administrator functionality, only the administrators (authorized users) is given permission to have access to the system. But first, they are required to submit their identification and password for authentication purposes. Then they are able to perform the maintenance tasks such as add, update and delete the existing records in the database system.

- ❖ **Add image** – this section allows the administrator to add new images and sentiments to the database.
- ❖ **Update/modify image** – this section allows the administrator to modify the detail of the images and sentiments.
- ❖ **Delete image** – this section allows the administrator to delete images or sentiments from the database.

Besides that, administrator also is allowed to change their password. After entering change password section, the administrator is required to enter old password, new password and confirm the new password.

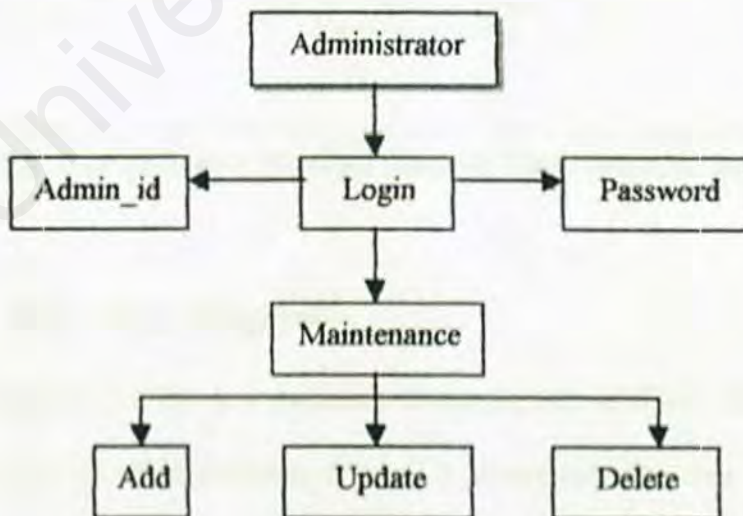


Figure 5.3: Administrator Structure Diagram

The previous two diagrams show the two main sections that make up Creative Wizard on Web. And the diagram below show the overall detailed functional design of the system after they are combined.

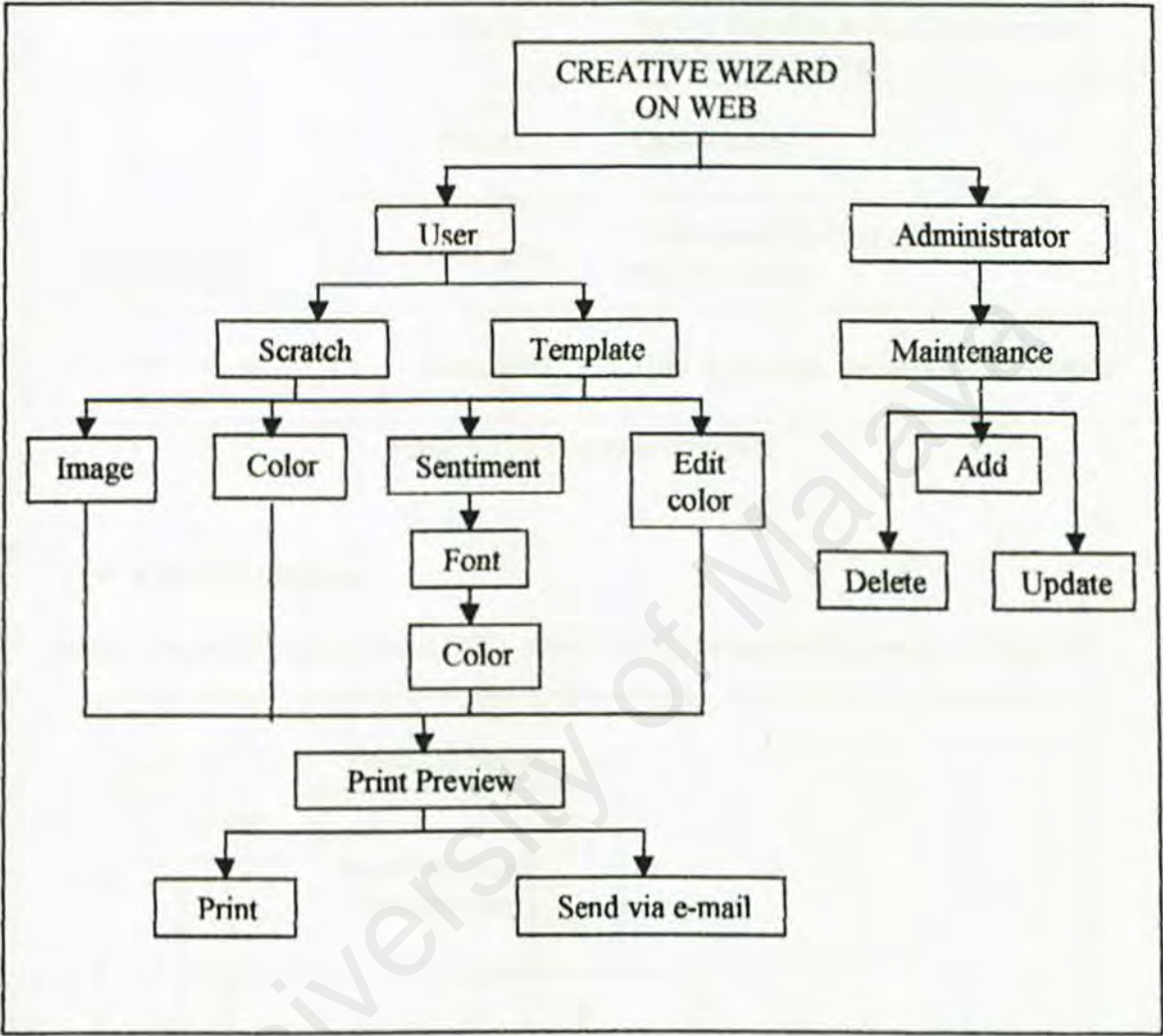


Figure 5.4: Overall System Structure Diagram For Creative Wizard On Web

• 5.2.3 Data Flow Diagram

Data flow diagram (DFD) is a graphical technique that enables analyst to depict information flow in an information system. It shows how the data flow into the system, how they are transformed and how they leave the system. DFD provides a mechanism for functional modeling as well as information flow modeling. The

components of the DFD consists of the following items shown in the table 5.1.





Symbol	Component	Description
	Entity	A person, group, department or other system that able to send and receive data from the system.
	Process	Data transfer
	Data store	Data repository that allow addition and data access.
	Data flow	Data flow from one process to another

Table 5.1: Component of DFD

❖ Context Diagram

Context diagram is a high-level DFD, which signify scope and boundary of a system.

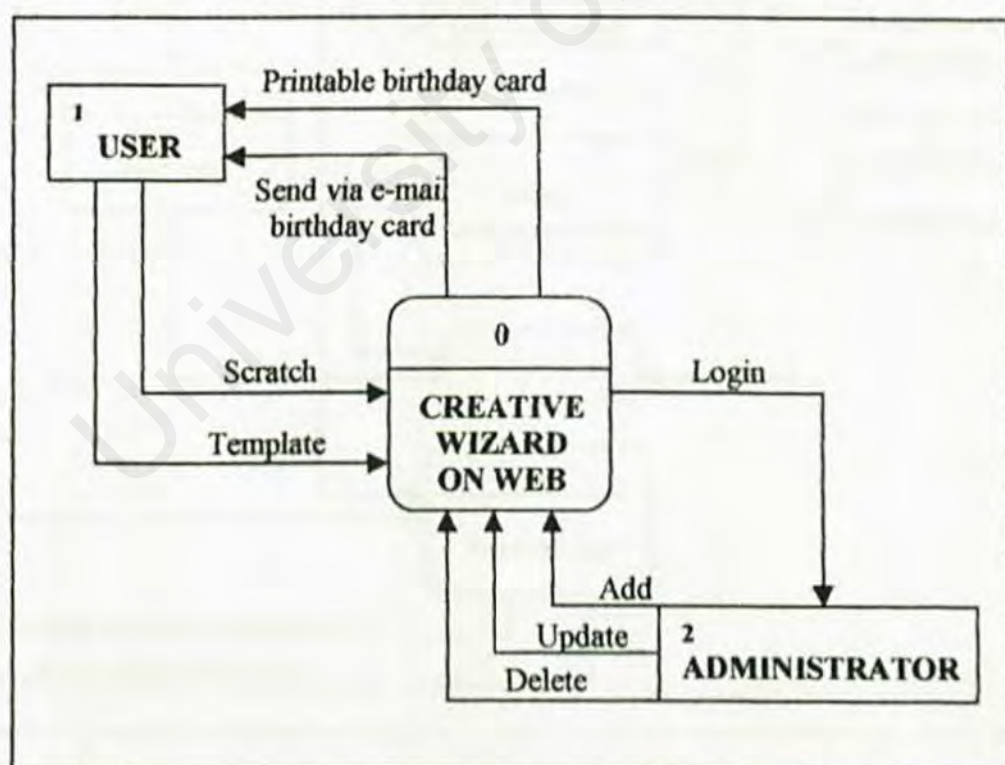


Figure 5.5: Context Diagram For Creative Wizard On Web

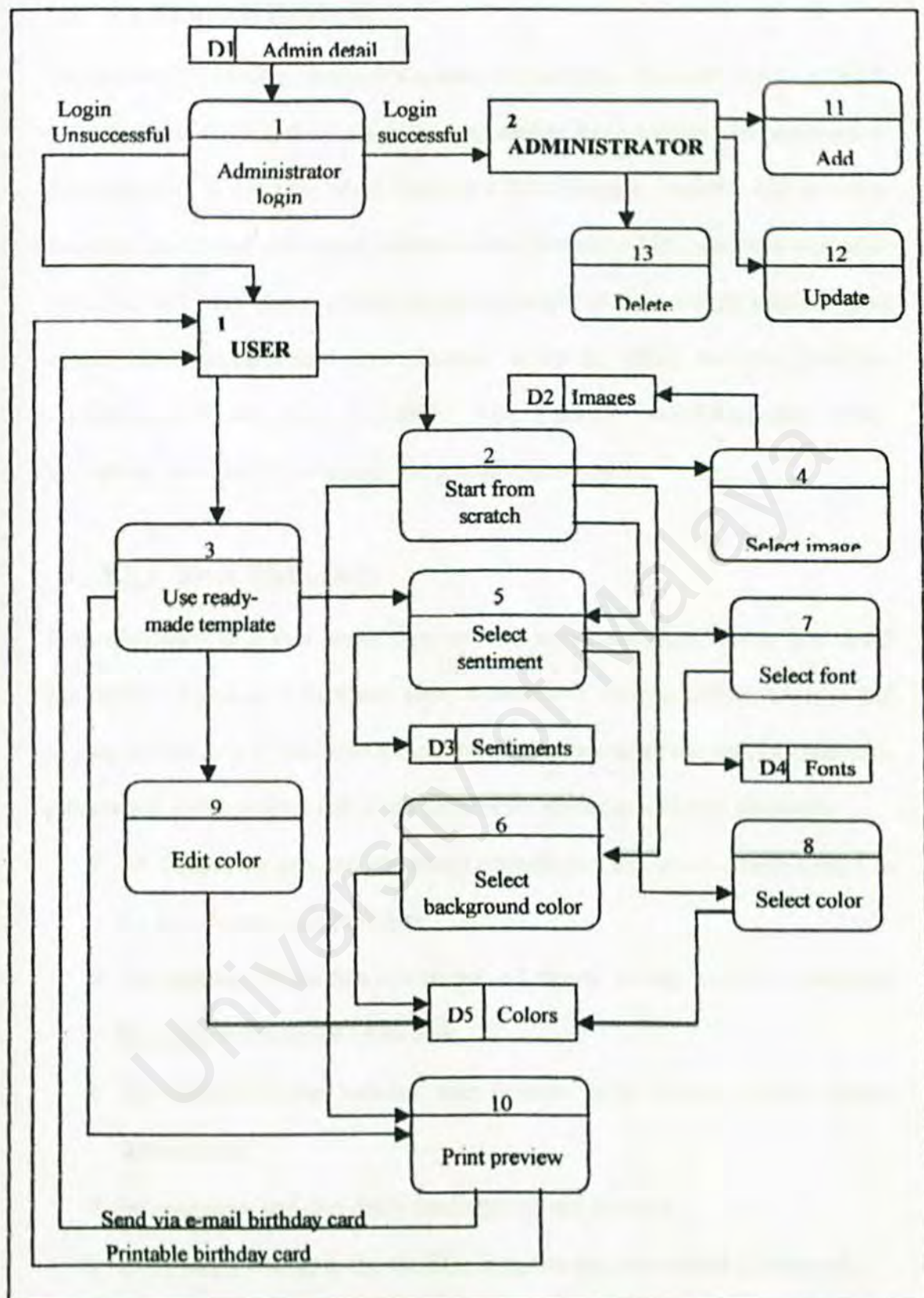


Figure 5.6: Zero Diagram For Creative Wizard On Web

5.3 DATABASE DESIGN

Creative Wizard On Web database is a relational database. Microsoft SQL Server 7.0 was selected to develop the database system because it can support a large amount of data especially in this case which involves a lot of images. Besides, ASP provides ActiveX Data Object (ADO) and Advance Data Connector (ADC) database support to SQL. ActiveX Data Object (ADO) enables developer to write a client application to access and manipulate data in a database server for which an Open Database Connectivity (ODBC) driver is available. ADO's primary benefits are ease of use, high speed, low memory overhead, and a small disk footprint.

• 5.3.1 Data Dictionary

Data dictionary is a data about data or also called metadata, which is a detail description of data in a database. Data dictionary is used to collect, compile and arrange certain facts of the system including the content of all the entities, processes, data storage and data flow. Below are some of the advantages of data dictionary:

- ❖ All the data are gathered and stored centrally. So, it is easier to have control on the organization's sources data.
- ❖ The meaning of the data can be defined clearly so that user will understand the usage and essential of the data.
- ❖ The communication between user become easier because of the clearer defined data.
- ❖ Inconsistency and data delay can be traced and avoided.
- ❖ Every single change to the database structure can be recorded immediately.

Below are the table used in Creative Wizard On Web:

Table 5.2: Image Table

Field Name	Data type	Description
Img_id	Int	The unique image ID
Fname	Varchar	Image name
Category	Varchar	Category of the image
Description	Varchar	Description of the image
Filename	Varchar	Filename of the image
Img	Image	Binary image

This table contains all image's information. The primary key for this table is Img_id.

Table 5.3: Sentiment Table

Field Name	Data type	Description
Snt_id	Int	The unique sentiment ID
Fname	Varchar	Sentiment name
Category	Varchar	Category of the sentiment
Description	Varchar	Description of the sentiment
Filename	Varchar	Filename of the sentiment
Snt	Varchar	Sentiment

This table contains all sentiment's information. The primary key for this table is Snt_id.

Table 5.4: Admin Table

Field Name	Data type	Description
Admin_id	Varchar	Administrator ID
Password	Varchar	Administrator password

This table contains provides the login information. The primary key is Admin_id.

• 5.3.2 Entity-Relationship Modeling

Entity-relationship modeling is an established methodology for determining the structure of databases. Along with it come entity-relationship diagrams, which are used to illustrate the hierarchy of entities and properties within a database. The following is a high level overview of the steps in the entity-relationship model:

- ❖ Identify discrete entities – will correspond roughly with the tables in the database, when it's finished.
- ❖ Identify the properties of those entities – this step is necessary after the entities have been identified.
- ❖ Identify the relationships between the entities – there are three types of data relationships that can exist, one-to-one, one-to-many, and many-to-many.
 - i) **One : One** – exist when one item is functionally dependent on another.
 - ii) **One : Many** – occur when one entity can correspond to several occurrences of the other entity.
 - iii) **Many : Many** – is a bit more complex because many entities can correspond to several other entities.

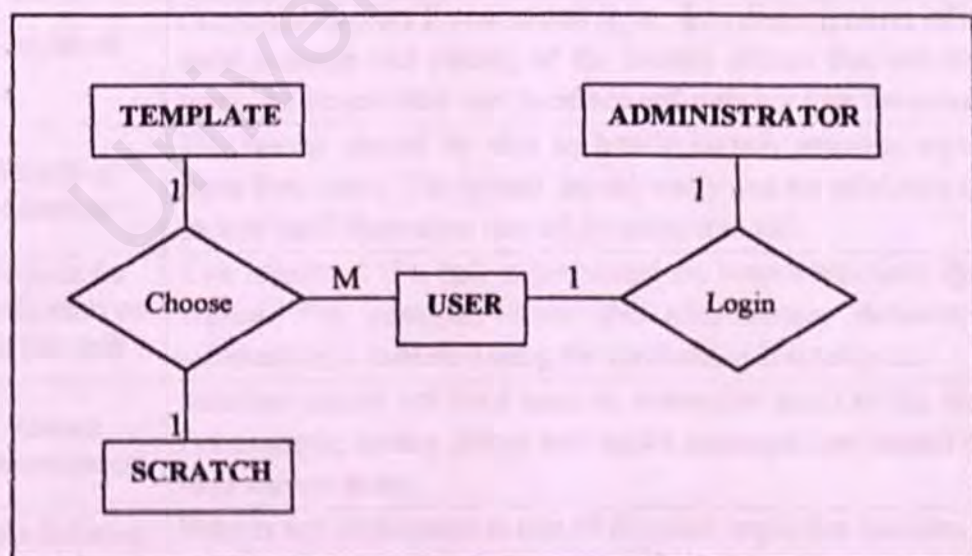


Figure 5.7 : Basic E-R Diagram For Creative Wizard On Web

5.4 INTERFACE DESIGN

User interface plays a very important role in determining the quality of an information system. User interface is the component of the system that communicates with the users. Therefore, the input data collected from the users and output data generates for the users depend on a well designed user interface. The interface design should meet the objectiveness, accuracy, ease of use, consistency, simplicity and attractiveness. All of these objectives are attainable though the use of basic design principle, knowledge of what is needed as input for the system, and an understanding of how the user should respond to different elements in the forms and screens. There are three main categories of guidelines that are taken into consideration and they are the general interaction, information display and data input.

• 5.4.1 General Interaction

Guidelines for general interaction often cross the boundary into information display, data entry and overall system control. Below are the guidelines for general interaction.

Guideline	Description
Consistent	Consistent formats for command input, data display, menu selection, and error message and placing of the control objects that are displayed to users. An inconsistent user interface will only confuse the users.
Handling mistakes	The system should be able to handle certain mistakes especially the input from users. The system should verify and do validation on them to protect itself from error that might cause it to fail.
Request for verification on certain task	This important if a task is performed on certain functions that may be critical. For example, when the administrator delete/update any information, a confirm asking for verification is appropriate.
Reduce memorization	Interface should not need users to remember much of the information. For example, having proper and useful messages can remind the user of their current status.
Help facilities	Help in any application is one of the most important modules that assist or serve as a guideline to users using the system.

Table 5.5: Guidelines For General Interaction

• 5.4.2 Information Display

Information display is an important issue. The misplacing of information may confuse the users and lead to misconception on the results. The following guidelines focus on information display:

- ❖ Display information that is relevant to current context.
- ❖ Use a presentation format that is easy to understand.
- ❖ Use consistent labels, standard abbreviations and predictable color.
- ❖ Provide meaningful error message.
- ❖ Comments that are not needed in certain context should be deactivated (or made visible) to avoid confusion.

• 5.4.3 Data Input

The user spends much of the time doing data input especially in an information retrieval system. The following guidelines focus on data input:

- ❖ Minimize the number of input actions required of the user. The main objective of this is to reduce keyboard typing by users and try as much as possible to use the mouse to select predefined sets of input (or results).
- ❖ Maintain consistency between information display and data input.
- ❖ Allow the user to control the interactive flow.

• 5.4.4 User Interface Design of Creative Wizard On Web

The following show the issues that taken into consideration during the user interface of Creative Wizard On Web.

- ❖ A consistent format for menu display, data display and form format. User can select same menu from any page.

- ❖ When a user input an invalid data, an error message will quickly be pop up.
- ❖ Some commands are deactivated if they are not needed, such as the fonts and colors selection for sentiments only will be activated if the sentiment has been chosen.
- ❖ The instructions of creating a card must be clear enough so that user will not be having any problem during the creation process.
- ❖ The images and the sentiments provided must be sufficient in order to satisfy users.

The following are the interface designs for two main pages of Creative Wizard On Web:

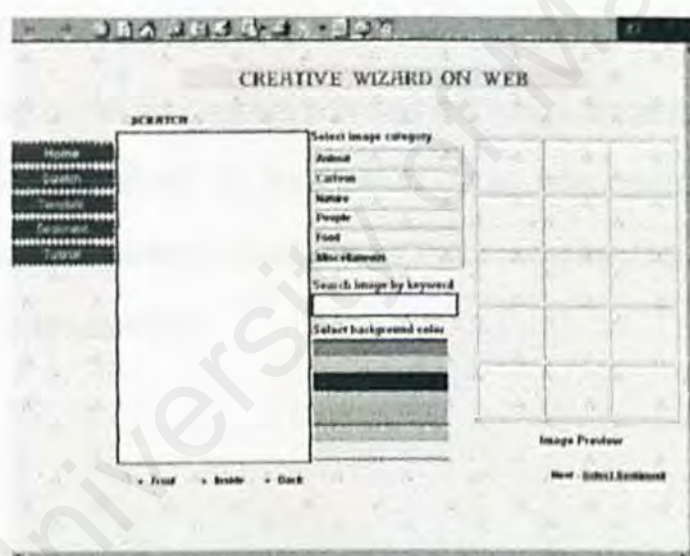


Figure 5.8: Interface Design For Start From Scratch Page

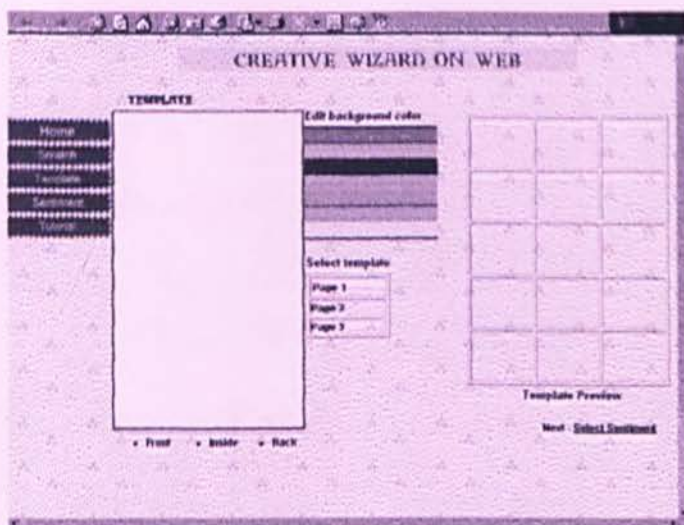


Figure 5.9: Interface Design For Template Page

5.5 SUMMARY

This chapter explains all the proposed processes and system design that are needed to develop my Creative Wizard On Web project. Along with database and interface design, this chapter intended to elucidate more on the understanding about the system that are going to be implement.

CHAPTER 6

SYSTEM IMPLEMENTATION

CHAPTER 6 SYSTEM IMPLEMENTATION

6.1 INTRODUCTION

The process of assuring that the information system is operational and then allowing users to take over its operation is called system implementation. System implementation is further defined as the construction of a new system and the delivery of that system into production in a day-to-day operation. It involves coding step that translates a detailed design representation of software into a program language realization. System implementation implements the various components of the system based on the collected requirements, where the design is translated into a machine-readable form.

During implementation, all functionality planned in design phased is checked. It should be able to process the correct data and produce accurate information to end-users. Any problem or malfunction occurred is revised carefully and fixed accordingly.

6.2 DEVELOPMENT ENVIRONMENT

The development environment is crucial for the completeness and successfulness of any computer system. Development environment plays a major role in determining the speed of developing the system. During development, the weaknesses will be noticed and improved, while the errors found will be removed.

Using suitable hardware and software will help to speed up system development. Thus, the hardware and software are carefully considered to facilitate the development

of Creative Wizard On Web. System development consists of the used of development tools and methodology chosen, and coding styles. The details are illustrated as below:

• 6.2.1 Development Tools

6.2.1.1 Hardware Requirements

The following hardware specifications are required to develop Creative Wizard On Web:

- ❖ Processor: 2.4GHz Pentium 4 processor
- ❖ Memory: 512MB RAM
- ❖ Hard disk: 20GB Hard Disk
- ❖ CD-ROM drive: 48x24x48x CD-RW Burner
- ❖ Floppy drive: 1.44MB Floppy Drive
- ❖ Input device: Mouse, keyboard, scanner, floppy drive and disk drive.
- ❖ Output device: Printer, monitor.

6.2.1.2 Software Requirements

The following software specifications have been used to develop Creative Wizard On Web:

- ❖ Operating system: Microsoft Windows 2000.
- ❖ Web Technology: ASP
- ❖ Server-side Scripting Language: VBScript
- ❖ Database Management System: Microsoft Access 2000
- ❖ Web Development Tool: Macromedia Dreamweaver UltraDev 4
- ❖ Interface Design Tool: Adobe Photoshop 6

• 6.2.2 Methodology

This project is developed using the waterfall approach. The development of this project consists of five stages, which are requirement, design, coding, testing and operation. The system is design using logical flow and it allows the estimation of the milestones. Each stage must be completed before proceed to the next stage to ensure that the system is built according to the requirements and specifications.

• 6.2.3 System Coding

System coding is a set of instruction written in order to enable the code to be executed and perform the required functionality. A good and well-managed program coding will enhance the readability of the whole program. In addition, it provides an easy understanding to the program flow especially for those programs with high degree of complexity.

6.2.3.1 Coding Approach

Some of the approaches used in the coding development are listed as below:

❖ *Readability*

Code document is important to ease the readability of a system. It begins with the selection of identifier (such as variables and labels) names and continues with the composition and organizing the whole program.

❖ *Naming Technique*

This is good and meaningful technique of variables, controls and modules that provide easy identification for the program. The naming convention is created with the consistency and standardization in coding.

❖ *Internal Documentation*

This provides a clear guideline to developers and readers about the function of a particular source code in the program. Therefore, comments provide the developer with the means of communication with other readers of the source code. The statement of the module and descriptive comments are embedded within the body of the source code is used to describe the processing function.

❖ *Modularity*

The main purpose of modularity is to reduce complexity of system and to facilitate the developer to implement the system by encouraging parallel development of different parts of the system. With the approach of modularity, developer can implement all modules at the same time and does not have to wait for a particular module to complete before going into another module.

6.2.3.2 Coding Style

Coding style is an important component of the source code and it determines the intelligibility of a program. An easy to read source code makes the system easier to be maintained and enhanced in future. Listed below are some of the coding styles used during the coding phase of this project:

- ❖ Selection of meaningful identifier names (variables, forms, labels, images and pictures).
- ❖ Description and an appropriate comment written in the source code to make it easier for the readers to understand the source code.
- ❖ Indentation of codes will increase the readability of the program and for a neater look.
- ❖ Meaningful and understandable function and method declarations.

- ❖ Keep all complex statement as simple as possible to avoid confusion.

6.3 PROJECT DEVELOPMENT

After defining all the hardware and software requirements for implementing this project, it's time to concentrate on the development process that involved activities and results of software production. This section will explain how design and system requirements are translated into the form that can be understood by the machine. There are three steps involved, which are data preparation, database connection and coding for each function. But before I explain more on these three steps, I would like to explain about a few changes that have to be made during this implementation phase.

• 6.3.1 New Software Requirements

During the implementation of Creative Wizard On Web, I have encounter a few problems regarding the software requirements chosen as mentioned in Chapter 4: System Analysis. Due to certain constraint and new discovery of better way to conduct my project, I have decided to change my requirements as stated below:

❖ *Microsoft Access 2000*

Instead of using Microsoft SQL Server 7.0, I have decided to use Microsoft Access 2000. This is because all of the data and images required for my project can be put into a folder and can be access by using SQL statements. These SQL statements are used to retrieve and update data in a database. I will explain more on this in the next section.

❖ *JavaScript*

Secondly, there is no use of JavaScript as the client-side scripting language since my project does not require any validation of user information.

❖ *Adobe Portable Document Format*

Thirdly, earlier in Chapter 2: Literature Review, I have mentioned about Adobe Portable Document Format, which I thought was necessary for user to view the card created and print them using the Adobe Acrobat Reader software but during the implementation I have amend it so that user will not necessarily have to have Adobe Acrobat Reader and still they can print the card.

❖ *Adobe Photoshop 6*

And my last adjustment on software requirement is that I only use Adobe Photoshop 6 for my interface design tool instead of using both Adobe Photoshop and Macromedia Flash. This is due to my lack of creativity and time, considering I have no experience in developing Web site before.

• **6.3.2 Data Preparation**

Before developing this project, all of the data involved must be first collected. As for my Creative Wizard On Web, the main feature of my project is the images used to create birthday card so the important thing to do is to look for the images that are suitable for making the birthday cards. There is a lot of Web site that offer free images for personal used so there's no problem for me to find the right images for my project. Next, each of the images are saved in four different kinds of folders, which are:

- ❖ 'Pics' folder – containing the main images

- ❖ 'Print' folder – containing the up-side down version of all the main images for printing
- ❖ 'Thumbnail' folder – containing the smaller version of all the main pictures
- ❖ 'Border' folder – containing images for border option

• 6.3.3 Database Connection

The Structured Query Language (SQL) is the common standard for accessing databases such as SQL Server, Oracle, Sybase, and Access. Knowledge of SQL is invaluable for anyone wanting to store or retrieve data from a database. Apart from that, SQL also can delete and update records in a database. It is the true engine for interacting with databases on the Web.

In this application, SQL statements are used to store, retrieve, delete and update data in Microsoft Access 2000 database. There are five tables created for Creative Wizard On Web, which are administration, borders, pictures, music and sent tables. The basic syntax to connect the database to the pages is as follows:

```
set conn=Server.CreateObject("ADODB.Connection")
conn.Open "card"
```

The syntax for accessing pictures, borders music, and sent tables are described as follows:

❖ Pics tables

```
// to select a desired image
sql="select * from pics where id=" & request.querystring("id") & ""
set rs = conn.execute (sql)
```

❖ Border tables

// to select border for card's customization

```
sql="select * from border where border_id=" & border & ""
```

```
set rs2 = conn.execute (sql)
```

❖ Music tables

// to select a music to be attached in send via email card

if request("music") <> 0 then

```
sql="select * from music where id=" & request("music") & ""
```

```
set rs3 = conn.execute (sql)
```

❖ Sent tables

// to call upon constantly used id

```
sql="select id from sent order by id desc"
```

```
set rs = conn.execute (sql)
```

• 6.3.4 Coding For Each Functions

The technology used in implementing this project is ASP. ASP stands for Active Server Pages and it is a Microsoft Technology. Below are several basic information about ASP:

- ❖ An ASP file is just the same as an HTML file

- ❖ An ASP file can contain text, HTML, XML, and scripts

- ❖ Scripts in an ASP file are executed on the server
- ❖ An ASP file has the file extension ".asp"

When a browser requests an ASP file, IIS passes the request to the ASP engine. The ASP engine reads the ASP file, line by line, and executes the scripts in the file. Finally, the ASP file is returned to the browser as plain HTML.

Basically, there are a few reasons that have encouraged me to adopt ASP for the implementation of my project. The ability and features of ASP file are no longer questionable since it has been proven during this implementation phase of Creative Wizard On Web. Some of the reasons to adopt ASP are described as follow:

- ❖ Dynamically edit, change or add any content of a Web page
- ❖ Respond to user queries or data submitted from HTML forms
- ❖ Access any data or databases and return the results to a browser
- ❖ Customize a Web page to make it more useful for individual users
- ❖ The advantages of using ASP instead of CGI and Perl, are those of simplicity and speed.
- ❖ Provides security since the ASP code cannot be viewed from the browser
- ❖ Since ASP files are returned as plain HTML, they can be viewed in any browser.
- ❖ Clever ASP programming can minimize the network traffic

6.3.4.1 VBScript

VBScript is the default language of Active Server Pages (ASP). As mentioned in Chapter 2: Literature Review, VBScript is a scripting language or more precisely a

"scripting environment", which can enhance HTML Web pages by making them active, as compared to a simple static display. When a VBScript is inserted into a HTML document, the Internet browser will read the HTML and interpret the VBScript. The VBScript can be executed immediately, or at a later event. So for many Web-application developers, VBScript may very well be the most important programming language.

6.4 SUMMARY

This chapter describes the implementation of the system being developed. It begins with the introduction to the system implementation. System implementation implements the various components of the system based on the collected requirements, where the design is translated into a machine-readable form.

Then, the chapter describes the development environment and project development of the system. The development environment includes of hardware and software requirements specification, methodology chosen, and system coding styles. Whereas the project development consists of the detailed of new software requirements, data preparation, database connection and coding for each function. All of the codes involved are included in Appendices to show the coding environment.

CHAPTER 7

SYSTEM TESTING

7.1 INTRODUCTION

System testing is a critical element of software quality assurance. It is required to ensure that the system is developed according to its specifications and in line with the users requirements and expectations. Testing is not the first place where faults finding take place but it is focused on finding faults and errors. There are many ways to increase the effectiveness and efficiency of the testing efforts, which will be discussed later in this chapter. Failure of a system can be the results of several reasons:

- ❖ The specification may be wrong or have missing requirement and do not state exactly what the customer needs.
- ❖ The specification may contain a requirement that is impossible to implement by the given predescribed hardware, software and resources.
- ❖ The system design phase may contain fault or error that carried forward to the implementation phase.
- ❖ The program code may be wrong. Perhaps the algorithm is implemented improperly.

Faults identification is the process of determining what fault causes the failure of the system. The fault correction or removal is the process of making changes to the system so that the fault can be removed.

7.2 TESTING OBJECTIVE S

The reason and objectives for performing extensive tests during the design and development of the system are as followed:

- ❖ Achieve high quality assurance such as completeness, accuracy, reliability and maintainability of the software program and its documentation.
- ❖ Ensure that the system can perform its functions as expected.
- ❖ Reduce cost in maintaining the system.
- ❖ A method for detection and removal errors.

7.3 TESTING TECHNIQUE

The component of a system will be allowed to manipulate the data, and the output will be observed. Thus, a wide range of inputs and conditions are chosen in order to test that particular component. A test point/test case is a particular choice of input data to be used in testing program.

• 7.3.1 White Box Testing

White box testing is a testing case design method that uses the control structure of the procedural design to derive test cases. By using white box testing methods, the test cases with the following characteristics can be driven:

- ❖ Exercise all logical decision on their true or false side.
- ❖ Exercise all loops at their boundaries and within their operational bounds.
- ❖ Exercise internal data structure to ensure their validity.
- ❖ Guarantee that all independent paths within a module have been exercised at least once.

• 7.3.2 Black Box Testing

Black box testing focuses on the functionality requirements of the system. It enables the developer to derive sets of inputs condition that will fully exercise all functional requirements for an application. Black box testing was not used as an alternative to white box testing technique rather than this technique is used as a complementary approach that is likely to uncover a different class of errors. Black box testing attempts to find errors in the following categories:

- ❖ Incorrect or missing functions
- ❖ Interface errors
- ❖ Errors in data structures or external data access
- ❖ Performance access
- ❖ Initialization and termination errors.

It also tests the functionality of the system in an ad hoc basis without knowing the logic structure of the code. Input is provided and output is verified manually to check for accuracy.

7.4 TESTING STRATEGY

A strategy to test this system is actually a series of steps that are implemented sequentially. After a program is completely coded, it will be tested under unit testing. Module testing will start when all the programs under a particular module have been completely coded and tested under unit testing. The integration testing is to recover errors associated with interfacing when integrating all the modules.

• 7.4.1 Unit Testing

Unit testing focuses on verification effort on the smallest component of the system design. Each component is treated as a standalone entity and tested individually to ensure that they operate correctly. The unit test is usually white-box oriented and the step can be conducted in parallel for multiple components.

The test that occurs as part of unit tests is illustrated schematically in Figure 7.0. The module interface is tested to ensure that information properly flows into and out of the program unit under test. The local data structure is examined to ensure that data stored temporarily maintains its integrity during all steps in an algorithm's execution. Boundary conditions are tested to ensure that the module operate properly at boundaries established to limit or restrict processing. All independent paths (basis path) are executed at least once. Finally, all error –handling paths are tested.

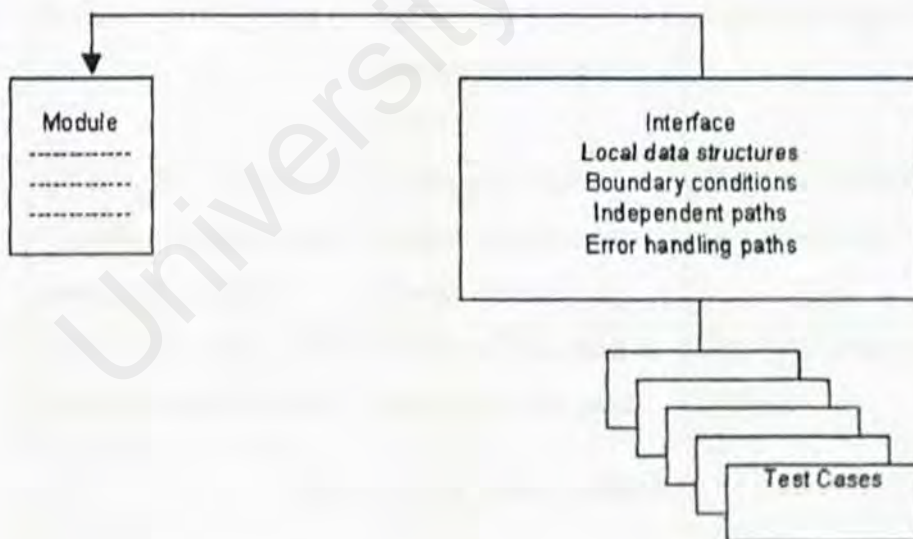


Figure 7.0: Unit Testing

7.4.1.1 Unit Testing Example

Table below shows the test cases for unit testing on the Creative Wizard On Web program.

Step	Test Procedure	Expected Outcome	Test Result Analyzing
1	Click one desired image.	The image is loaded and showed in next page.	The image displayed successfully.
2	Type in recipient and sender's name, e-mail addresses and messages that are to be put in the card.	The image is processed and the information entered is previewed in the next page.	The information entered along with chosen card shown successfully.
3	Choose any button set to customize card.	Customized card is previewed.	The customization is successful and new card design shown successfully.
4	Click the modify design button to modify card.	Previous page will be loaded and customization can be redone.	New customized card shown successfully.
5	Click the Send to Recipient button to send the card via e-mail.	A new page will display confirmation of sent card.	The card is successfully sent via e-mail.
6	Click the Print Card button to print the card	Ready-to-print card is shown in a new page.	The card is successfully printed.

Table 7.0: Unit testing example

- **7.4.2 Control Object Testing**

All the menus are clicked to test their functionality and work stages are tested with the image and song format supported by this system, which are gif for images and mid for songs.

- **7.4.3 Integration Testing**

Integration testing is a systematic technique for constructing the program structure while at the same time conducting tests to uncover errors associated with interfacing. Testing a specific feature together with other newly developed feature is known as integration testing. In other words, when the individual components are working correctly and meet the objectives, these components are combined into a working system.

In this system, a bottom-up approach has been used. Bottom-up integration testing begins construction and testing with modules at the lowest levels of the system and then moving upward to the modules at the higher levels of the system. Regression testing is the re-execution of some subset of tests that already been conducted to ensure that changes have not unintended side effects. It is the activity that helps to ensure that changes (due to testing or other reason) do not introduce unintended behavior or additional errors.

- **7.4.4 System testing**

System testing is a series of different tests designed to fully exercise the software system to uncover its limitations and measure its capabilities. The objective is to test an integrated system and verify that it meets specified requirements. Although each

test in this system has a difference, all work to verify that the system elements have been properly integrated and perform allocated functions.

7.5 SUMMARY

This chapter is all about testing. These testing include unit testing, control object testing, integration testing and system testing.

Creative Wizard On Web has been tested and debugged effectively to achieve the objectives of the system. Through all the testing phases, it is easier to ensure the system's qualities and strengths. Debugging and fixing of the program can be done. The limitations of the system's functionalities can be found and improved.

As a conclusion, testing phase is a very important phase in Creative Wizard On Web and it must be done repeatedly and carefully to assure good system quality.

CHAPTER 8

SYSTEM EVALUATION

8.1 INTRODUCTION

In the process of developing a system, various problems have been identified which some have been solved and some of them are yet to be discovered and overcome. These problems were solved through research and reference books. Besides, a lot of system analysis has been done on technological and programming concepts to grasp the concept of Internet programming.

After all the designing and developing as well as implementing the Creative Wizard On Web, the end product of the project is brought up for evaluation. The system was evaluated to identify the strengths and the limitations of it. Besides, proposal and recommendations are made for the future enhancements of the system.

8.2 PROBLEMS ENCOUNTERED AND SOLUTIONS

❖ *Difficulty in choosing a suitable development tools*

There are too many software tools that are available for developing Creative Wizard On Web. It is difficult to choose the most suitable development tools from a wide variety of choices. Choosing a suitable technology and tools was a critical process as all tools possess their own strengths and weakness. Some tools were even decided during the implementation process. Besides, the availability of a technology, hardware and supporting software to support, its learning curve, compatibility with the existence operating system and technologies are also the major consideration.

In order to solve the problem, seeking advices and views from project supervisor, course-mates and even seniors engaging in similar project were carried out. Furthermore, a great deal of reading and research from many resources like books and Internet regarding the problems helped to solve the problem and choose the suitable tools were done before any decision was made.

❖ *Lack of knowledge in ASP and VBScript*

Since there was no prior knowledge of VBScript scripting language, there was an uncertainty on how to organize the codes. These programming languages and concepts were never familiar to me before and to implement such an application requires a fair grasp of the languages. These programming approaches seem to be totally different from other programming languages. Although it really cause a lot of time to learn this coding tool, but choosing to use VBScript proved to be a wise move since it is the default language for ASP. Most of the problems faced were manageable through browsing the Internet for related materials and referring to the help function provided in the software. Discussion with friends especially course-mate using the same technology was a great help. A more efficient method was through trail and error during the coding phase.

❖ *Difficulties in defining the flow logic of the system*

This system is only based on the information gathered from reference books and Internet; as a result, the flow of the system is very hard to define. This system is merely following the flow logic based on my understanding of the requirements and the important of ease of use. The image manipulation knowledge that I have gained from the lecture session also proves to be very useful to design the flow.

8.3 SYSTEM STRENGTHS

❖ *Simple, user-friendly and easy to use*

The interface design of this system mostly was created using Adobe Photoshop. It is designed to be as user-friendly as this system is relatively easy to learn and use. All the menus used to ease the user explore and try this system by themselves. An action is just a click away and the user just needs minimal knowledge of mouse and keyboard to use this system.

❖ *Support sending card via e-mail function*

This function is just like any other electronic greeting scheme where when the user has opted for sending the card via e-mail, the recipient will receive a message or an instruction to click on the link stated to retrieve the card.

❖ *Support printing function for card*

This option is very special since it is quite hard to find greeting card Web sites with printing option. With Creative Wizard On Web, not only user can send the card via e-mail, they also have the option to print the card adding great feature to Creative Wizard On Web.

8.4 SYSTEM CONSTRAINTS

❖ *No start from scratch option*

Referring to the title of my project, which is Creative Wizard On Web, this system should offer a wizard to help user to create a card from scratch or from template but due to my lack of knowledge, experience and guidance, I was only able to accomplish

the template part. In addition, after conducting a few more research about this problem, I have found that it was impossible to implement the function in Web application. Furthermore, so far the function can only be seen in greeting card software, which is not Web based application. Even though there is no option to create the card from scratch, user can still select their preferred card and add in some attractive features to enhance the look of their card with design option provided.

❖ *No search keyword function*

No search keyword function in this system. Since the user is only provided with the template page, I feel that there is no need of keyword function. All of the images are displayed in one page and user can just pick their choice. In contrast, this drawback however still can guarantee satisfaction to user in a way that they can reduce the time it takes to create a card because it will take some time to load all the related results.

❖ *No customization for printing option*

In this system, only the send via e-mail card are customized before sent. For print option user can only print the original image chosen plus the additional messages that have been written earlier.

8.5 FUTURE ENHANCEMENTS

System development is a dynamic process and changes must be expected. Due to limited resources, especially time, had caused me to miss or overlooks certain aspect of the system. However, after the development system has been completed and valuable advices and suggestions from my project supervisor and moderator, I have

identified certain important aspects that can be improved for future enhancement. The additional features that can be implemented in future are as followed:

❖ *Start from scratch option*

After explaining earlier in system constraint section about this feature, I think with enhanced tools in the future, this function is no longer impossible to implement.

❖ *Support variety of image format*

Since there are many types of images available nowadays, the system should be able to support all of it in order to provide unlimited types of images to user.

❖ *Add more customization button*

To make this system more utilizable in the future, the customization button selection must be added to give user variety of options. Plus, the customization also must be able to be applied to the printable card.

8.6 KNOWLEDGE AND EXPERIENCE GAINED

Towards the accomplishment of Creative Wizard On Web, from the beginning to the end of the development and final documentation, a number of problems and difficulties are encountered. However, the solutions to these problems and difficulties have brought numerous valuable knowledge and experience. Following are the benefits and knowledge gained from this project:

❖ *The importance of all phase in SDLC*

System analysis is an important phase in the System Development Life Cycle (SDLC). This phase captures user requirements and the goal of the system. If this phase is mistakenly defined, it will cause faulty to the system development and later progress. With a complete and thorough system analysis, the system that is developed will fulfill all the requirements and achieve its goals.

System testing is also an important and critical phase in SDLC. There is no application that is free of error in this world. However, with the procedures in the system-testing phase, errors and faults in the system can be minimized.

❖ *Development tools knowledge*

This project is developed using ASP technology with VBScript scripting language. ASP is a great tool for creating dynamic Web pages. With ASP, it is easy to create, deploy data, validate user input and upload files and also it has helped me improve my skill in VBScript language.

Also, with the use of other tools such as Macromedia Dreamweaver, Adobe Photoshop and Microsoft Access 2000, my knowledge in developing Web site will never be limited anymore.

8.7 SUMMARY

Evaluation of system is indeed to ensure its objectives and intended functions have been achieved. This chapter covers all the aspects of the evaluating application software.

The successful development of the system at the present is the first step towards the future expansion of the system. The problem encountered and experience gained during the development phases should be helpful in future efforts.

Besides, this chapter also summarizes the system strengths, system constraints and future enhancements that can be added. The future enhancements will equip the system towards more capabilities of doing its daily operations and activities.

CONCLUSION

CONCLUSION

Creative Wizard On Web is one of many printable birthday card Web sites available in the World Wide Web nowadays. It offers printable card option along with send via e-mail function. Besides, it also provides some types of effect that allow user to enhance their image. However, the system will become more complete and capable of performing more tasks when the enhancement and the new features are added on in the near future.

In the process of developing this system, invaluable insight was gained into complexities and intricacies of programming. The application of Software Engineering principles, fundamentals and additional knowledge in programming languages, skills coding writing and others all added up to contribute to the success of developing this system. Adhere to development schedule is crucial in determining that a system will be completed in time. The experience gathered in this project will definitely provide a solid foundation in the system development in the future.

With target goals and objectives in mind even before the development takes place, makes the development process more systematic. Sometimes, conflicts in real world situation and programming tools capabilities make the programming difficult. However, as an overall review, this project has achieved and fulfilled the objectives though its not meets the requirements determined during the analysis phase entirely.

APPENDIXES

APPENDIX A

QUESTIONNAIRE

QUESTIONNAIRE

I have conducted a survey on 25 people in order to get a rough idea on the reactions and responds from user about a Web site that offer printable birthday card just like Creative Wizard On Web. Below are the questionnaires for my survey:

1. What type of greeting card that you think is the most popular?

☐

Birthday card

☐

Good Luck card

☐

Anniversary card

☐

Other cards

2. Which do you prefer?

☐

Buy the card at the store

☐

Get it free from the Internet

3. If you choose to get the card from the Internet, which of the following will you choose?

☐

Send an e-greeting

☐

Get a printable version

4. For the printable version, which do you prefer?

☐

Create the card yourself before you print

☐

Just get a ready-made card and print

5. After you create the card yourself, which do you prefer?

☐

Print the card

☐

Send via e-mail

This is the result from my survey:

- ❖ The most popular greeting card is birthday card.
- ❖ About 56% have chosen to just buy the card at the store because most of them don't have time to surf the Internet to search for a greeting card.
- ❖ From the other 44%, half of them have chosen to get a printable version .
- ❖ Most of them also think that if they can make the card themselves, it is much better because of a few reason such as they think it will give a sentimental value to the person who will receive the card.
- ❖ And finally, from the portion, 91% preferred to print the card and give it by hand themselves rather than send the card via e-mail.

APPENDIX B

SAMPLE CODING

SAMPLE CODING

❖ *Sample Coding For Index Page*

```

<%@language = VBScript %>
<% Option Explicit %>
<html>
<head>
<title>Creative Wizard on Web</title>
<LINK href="ina2.css" type=text/css rel=StyleSheet>
</head>
<body topMargin=0 vLink=#003366 marginheight="0" marginwidth="0"><div align=center>
<table width="450" border="0" cellpadding="1" bordercolor="#000000" bgcolor="#000000">
  <tr>
    <td bgcolor="#FFCC33"></td>
  </tr>
  <tr>
    <td height="15" bgcolor="#000000"> <font color="#FFFFFF"></font></td>
  </tr>
  <tr>
    <td height="120" bgcolor="#FFFFFF">
      <table width="100%" cellpadding="5" bordercolor="#FFFFFF" bgcolor=#fffff>
        <tr>
          <td colspan=3>Welcome to Creative Wizard On Web!!!! We offer free greeting cards for
            the masses. There are various images to choose from. Our cards can be printed or e-
            mailed directly to the recipients. You can design your card based on your own
            creativity.<br><br>
            <table width="100%" border="0" cellspacing="0" cellpadding="0">
              <tr>
                <td width="6%"></td>
                <td width="94%">1. Choose any of the images below to be the front part of your
                  card</td>
              </tr>
            </table> </td>
          </tr>
        </table>
      </td>
    </tr>
  </table>
  <div align=left>
    <%
      dim conn,rs,sql,kira
      set conn=Server.CreateObject("ADODB.Connection")
      conn.Open "card"

      sql="select * from pics"
      set rs = conn.execute (sql)
      kira = 0
      do until rs.EOF
        if kira < 3 then
          kira = kira + 1
        %>
        <td height="28"><a href="step1.asp?id=<%response.write rs("id")%>"><img
          src=thumbnail/<%response.write rs("filename")%> border=0></a></td>
        <%
      </div>
    </table>
  </div>
</body>
</html>

```



```

        else
            kira = 1
        %>
    </tr>
    <tr>
        <td height="42"><a href="step1.asp?id=<%response.write rs("id")%>"><img
            src=thumbnail/<%response.write rs("filename")%> border=0></a></td>
        <%
            end if
            rs.movenext
        loop
    %>
    </tr>
</table>
</td>
</tr>
</table>
</div>
</body>
</html>

```

APPENDIX C

USER MANUAL

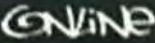
USER MANUAL

❖ STEP 1: Select image for card



- User must choose one image desired from images shown.

❖ STEP 2: Form Completion

 **Free Greeting Card For The Masses !!**

2. Enter sender's & recipient's information. Post your message below

- Your message will appear here -

Please enter your message below,
then click on "Preview and Customize"
to complete your card.

- Your name will appear here -

Sender & Recipient's Information

Recipient's Name	<input type="text" value="wahize"/>
E-mail Address	<input type="text" value="wahize@hotmail.com"/>
Your Name	<input type="text" value="mel"/>
E-Mail Address	<input type="text" value="melodie@hotmail.com"/>

Enter your message below

☐ Notify me by email when the recipient reads this greeting.

- User must now enter the recipient's name and their e-mail address and also user's name and e-mail address as the sender.
- Enter user's own messages in the blank space provided.
- Click the 'Preview and Customize' button at the bottom of the page to preview the information entered and to customize the card.

❖ STEP 3: Customization



- The information previously entered will appear in this page.
- Now user is given a few selection of customization style button to enhance the look of their card that is to be sent via e-mail. The buttons are:
 - i) **Font Type** – to select font type for messages
 - ii) **Font Color** – to select color for font
 - iii) **Font Size** – to select the size of the font
 - iv) **Background** – to select background color of the card
 - v) **Music** – to select music that is to be played when the recipient view the card.
 - vi) **Border** – to select border pattern
- Click the 'Preview Design' button at the bottom of the page to preview designed card.


❖ **STEP 4: Modify/ Send/ Print**



➤ The customized card are shown in this page and now user can decide their next action with the three button provided.


- (iii) **Modify Design** – to redesign the card
- (iv) **Send to Recipient** – to send to the recipient via e-mail
- (v) **Print Card** – to print the card

❖ **STEP 5: Confirmation**

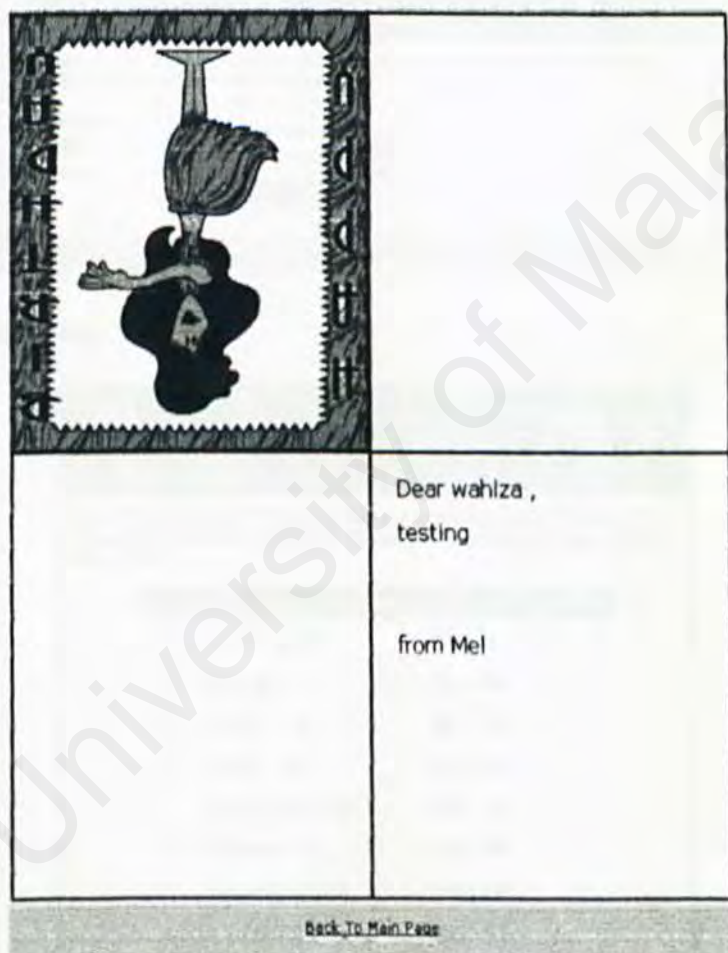


ONLINE

Free Greeting Card For The Masses !!

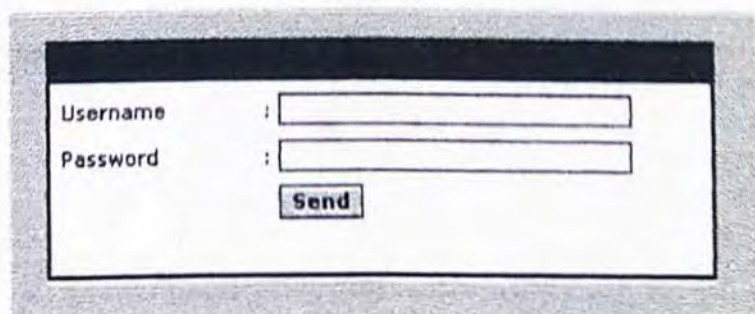
 Your Card Has Been Sent to wahiza through e-mail
[Click here to return to the main page](#)

- User will be notified about the status of the card sending.



- The print page for user to print their card.

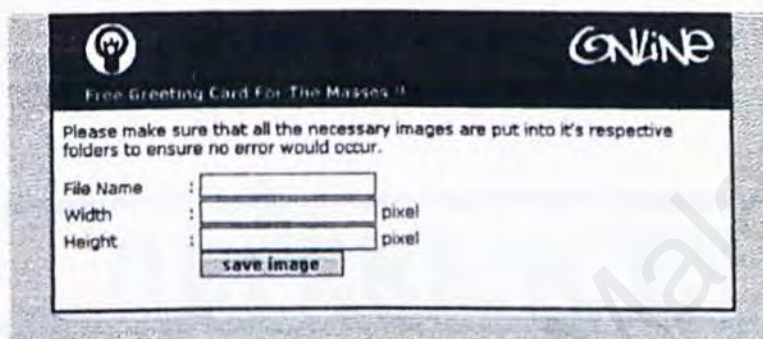
❖ FOR ADMINISTRATOR PAGE



Username :

Password :

- Enter administrator username and password



Free Greeting Card For The Masses !!

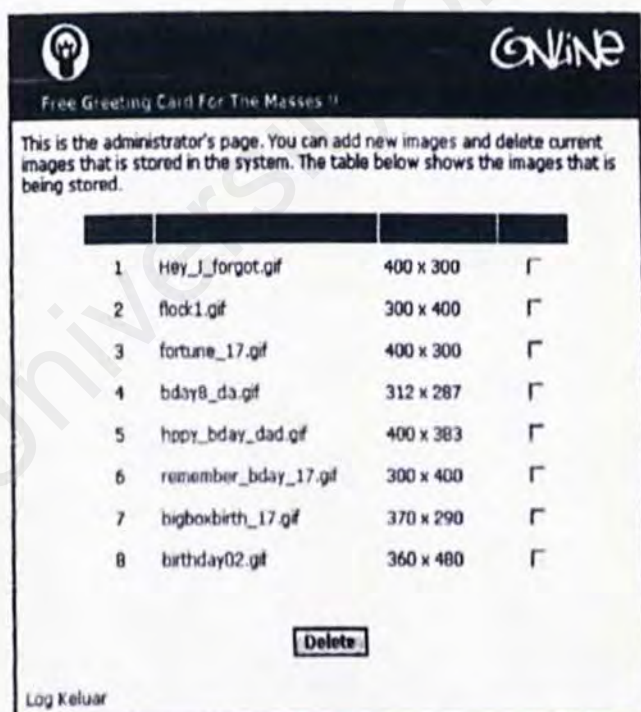
Please make sure that all the necessary images are put into it's respective folders to ensure no error would occur.

File Name :

Width : pixel

Height : pixel

- Add new image



Free Greeting Card For The Masses !!

This is the administrator's page. You can add new images and delete current images that is stored in the system. The table below shows the images that is being stored.

1	Hey_I_forgot.gif	400 x 300	<input type="checkbox"/>
2	flock1.gif	300 x 400	<input type="checkbox"/>
3	fortune_17.gif	400 x 300	<input type="checkbox"/>
4	bday8_da.gif	312 x 287	<input type="checkbox"/>
5	happy_bday_dad.gif	400 x 383	<input type="checkbox"/>
6	remember_bday_17.gif	300 x 400	<input type="checkbox"/>
7	bigboxbirth_17.gif	370 x 290	<input type="checkbox"/>
8	birthday02.gif	360 x 480	<input type="checkbox"/>

[Log Keluar](#)

- Delete unwanted image

REFERENCES

REFERENCES

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Dr. Abdullah Embong (2000). *Sistem Pangkalan Data: Konsep Asas, Rekabentuk Dan Pelaksanaan*. Tradisi Ilmu Sdn. Bhd.

Homer, Enfield, Gross, Jakab, Hartwell, Gill, Francis, Harrison (1997). *Professional Active Server Pages*. Wrox Press Ltd.

Kendall Kenneth E. and Kendall Julie E. (1992). *System Analysis And Design*. 2nd Edition. Prentice Hall Inc.

Mohamad Noorman Masrek, Safawi Abdul Rahman, KamarulAriffin Abdul Jalil (2001). *Analisis & Rekabentuk Sistem Maklumat*. McGraw-Hill (Malaysia) Sdn. Bhd.

Shari Lawrence Pfleeger (2000). *Software Engineering: Theory And Practice*. Prentice Hall Inc.

LIST OF WEB SITES

<http://www.microsoft.com>

<http://www.adobe.com>

<http://www.macromedia.com>

<http://www.netscape.com>

<http://www.zdnet.com>

<http://www.java.sun.com>

http://www.devguru.com/Technologies/vbscript/quickref/vbscript_intro.html

http://www.devguru.com/Technologies/ecmascript/quickref/jscript_intro.html

<http://www.ycoln-resources.com/kb/technotes/javascript.asp?s=3>

http://www.w3schools.com/sql/sql_intro.asp

http://www.w3schools.com/vbscript/vbscript_howto.asp